

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 80.

NEW YORK, SATURDAY, MARCH 15, 1902.

NO. 11.

SPECIAL ARTICLES.

THE MEDICAL DEPARTMENT OF TULANE UNIVERSITY OF LOUISIANA.

THE founding and upholding of the Medical Department of Tulane University of New Orleans was largely due during its earlier years to the energy of two young men who were born far away from one another, educated under totally different conditions, and who met and formed a friendship under the most tragic and harrowing circumstances.

The names of Thomas Hunt and Warren Stone are among the greatest names of New Orleans and in the annals of the Medical College. Both were born in the same year, 1808, but, while Dr. Hunt's family were wealthy people who had come from the West Indies, Dr. Stone was the son of a Vermont farmer. Dr. Hunt was born in Charleston and brought up with every advantage that wealth and education could give to a remarkably precocious and clever boy. The classics, law and literature were his accomplishments before he selected medicine as his profession. He took his degree at the University of Pennsylvania at the age of twenty-one and went to Paris for a year and a half, returning to Charleston on the death of his father.

While he was receiving the education and the introductions that were to insure him a reception in the best families and in the highest medical circles of the South, his unknown contemporary, a fatherless boy in St. Albans, Vermont, was getting the scanty education of a farmer's son in New England. His mother, however, supplemented the deficiencies and aided him materially in the preparation for the study of medicine. After graduating from the Medical School of Pittsfield, Mass., in 1831, he began to practise in Troy, N. Y., and it so happened that he was called upon to attend the first cholera case that was brought to Troy, which came with the emigrants to Quebec and Montreal, who, in their alarm, fled to the States by way of Lake Champlain. Dr. Stone promptly recognized the new disease and attended the destitute victim. Thirty-five years later he wrote a paper on cholera and its treatment, in which he said: "It so happened that my professional life and the cholera in this country commenced together," and it is a wonder that his professional career did not end when it began, with the cholera; for his experience in Troy was but the introduction to the exciting siege with it in the cholera ship "Amelia," in which he embarked for New Orleans, where he had determined to settle and practise.

The brig "Amelia" left New York with 108 passengers. Four days out a terrible storm came

on and all the passengers, four of whom had started from New York with cholera, were stifled under the hatches, which were closed to keep the ship from sinking. When the storm passed Dr. Stone found twenty-five persons in the second stage of cholera. The vessel was beached on Folly Island, off Charleston, and was soon boarded by wreckers who carried the disease with them from the ship. The island was the property of a planter, Mr. Alexander Milne, who opened his house to the sick and destitute shipwrecked people and generously furnished supplies. The wreckers were forbidden the ship and it was burned. All communication with the mainland was cut off, except for the physicians who were sent out by the city. Three were in turn sent to quarantine the island and tend the sick, but returned exhausted. Then young Dr. Hunt was appointed and given full charge. A few months before he had prepared such a complete and extensive memoir on the subject of cholera and the measures for its prevention that it was afterward published for practical use when the disease spread. He entered on his task with great courage and energy. The passengers and negroes of the plantation demanded his incessant personal care, but in the midst of the strain and horror he was assisted at every turn by Dr. Stone. These two youths of twenty-three bore the brunt of the work together and formed a friendship which endured through their lives.

Sickness was the reward of Dr. Hunt's efforts and poverty the result of Dr. Stone's journey. Both were thinking of New Orleans as a place to settle and discussed their future together. On leaving Folly Island Dr. Hunt returned to Charleston, where he was received as a hero and where he was presented by the citizens with a massive silver goblet as a testimonial of their gratitude, while Dr. Stone continued his journey to New Orleans, and in December, 1833, arrived on the levee with one picayune in his pocket. He often said, half humorously, that he would not have saved this, but for the sake of preserving a nucleus.

It was in that year that cholera claimed six thousand victims from a population of fifty thousand, and that in a city where yellow fever was also epidemic. The ravages of the two frightful pestilences filled the new Charity Hospital to overflowing and, through the kindness of Dr. Cenas, Dr. Stone was appointed to a position in this hospital.

A few months later Dr. Hunt, who had moved to New Orleans and succeeded Dr. J. M. N. Pictou as house surgeon, renewed his friendship with his companion of the Folly Island pestilence, and through his recommendation Dr. Stone became assistant house surgeon under Dr.

John H. Harrison, house surgeon, upon the resignation of Dr. Hunt, who had conceived the plan of using his energies in founding a medical college in New Orleans.

The name of Dr. Harrison introduces another brilliant young man to the trio of future great men of the city and of the yet unfounded medical school. John Harrison was also born in 1808, but in Washington. He came of an old and well-known Maryland family, and inherited his taste for medicine from his father, who was a surgeon. He studied medicine with his uncle, Dr. Baltzell, and was graduated from the University of Maryland in 1831. His classical and scientific education had been excellent and he was proficient in foreign languages, so that when he came to New Orleans to begin the practice of medicine as a mere boy he was thought rather a poetic and philosophic young fellow, and he had no very extensive practice at first.

Dr. Hunt's ambition to awaken New Orleans to its opportunity of becoming a medical and scientific center gave Dr. Harrison the opportunity just mentioned to enter the Charity Hospital; so the three forceful and able youths were brought into close and practical relations.

The condition of medical education in the United States was at that time in need of improvement. "The great majority of its physicians had no better medical education than that gained as pupils in a doctor's office, and American medical colleges originated as substitutes for this very inadequate apprentice system. Colleges were neither founded, nor financially aided, nor supervised by a paternal government, as were most European colleges, but were the offspring of private enterprises. In fact, almost every one was a joint stock company, composed of a few ambitious medical graduates. The maintenance of these colleges, including the salaries of the self-appointed professors, was wholly dependent on the number of students and the amount of their fees. Hence, the colleges were forced, in order to survive, to adopt such measures as would tend to increase the number of students."

The Medical College of Louisiana, which was the germ of Tulane University, was just such a joint stock company and was the outcome of Dr. Hunt's enthusiasm and energy. He delivered the introductory lecture in September, 1834, and was appointed professor of anatomy and physiology and elected dean. His associates were Dr. Charles A. Luzenburg, Dr. J. M. Mackie, Dr. T. R. Ingalls, Dr. A. H. Cenas, Dr. E. B. Smith, and Dr. Warren Stone, who was given the demonstratorship of anatomy in the place of Dr. Harrison, who was deterred from serving on account of ill-health.

In the first session eleven students were graduated, but the numbers increased through the persistency and the excellence of the faculty. The requirements, however, were not very great. Attendance at two annual sessions of four months each was required, and, as students could

enter very late and leave very early, there were instances of cases in which little more was required than one's presence, payment of the entrance fees, and attendance at the final examinations; so the early standard of the college was no higher than that of its contemporaries. Although a third year of practical experience in a doctor's office was formally required, certificates of such study were frequently worthless.

Dr. Chaillé, of the class of 1853, says of the regulations at that day: "I myself was graduated in 1853, only seventeen months after opening a medical book for the first time, and, to prove how very little was then required, I was graduated, as were no doubt many others, by the unanimous vote and with the congratulations of the faculty, and no question was ever asked as to how long I had been a student of medicine."

Until 1868 every candidate was examined by every professor on the same day, one professor following another, and each occupied so little time that in about an hour and a half all the examinations to which any one student was ever subjected were completed. These hasty examinations were exclusively oral and were never preceded by any reports from laboratories or any other source, as to the amount and efficiency of any work done by the student. Brief as was the examination of every professor, part of his time was often devoted to kind inquiries as to the welfare of the student and his family.

From 1834 to 1867 the Medical College of Louisiana never had more than eight or ten teachers, instructing in only eight or nine branches of medicine and in only two laboratories; but the men whose names appeared on the first faculty, as well as others who for many years worked together, gave an impetus to the study of medicine that the mere routine work of text-books and laboratories often lacks; and no better reminiscence of the early days of the Medical School can be given than by recalling the personal characteristics and the life-work of Dr. Hunt, Dr. Stone and Dr. Harrison, as well as their distinguished associates.

Dr. Harrison, not finding the hospital work wholly to his taste, gladly accepted the chair of physiology and pathology in the Medical School and resigned from the hospital in favor of his powerful young assistant, Warren Stone; he became attending physician, while he threw his whole energy into physiology. In a few years he had read, translated, examined, and experimented with every branch of science connected with the subject of physiology, and had prepared a course of lectures that attracted the better class of students. So elaborate in scientific and philosophical detail were these lectures that it required an ample preliminary education to understand them, but that very requisite raised the standard of the students' ambitions, and Harrison's reputation and popularity drew many men to the college.

In 1844 Dr. Harrison published in Philadelphia a valuable book, "The Nervous System,"

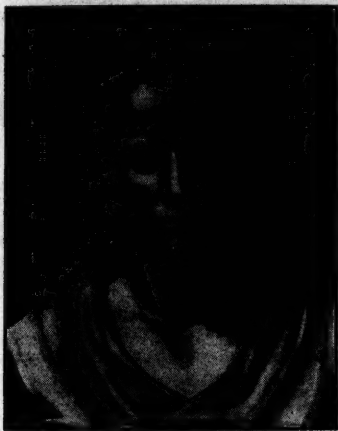
and in 1845 he became one of the four editors of the *New Orleans Medical and Surgical Journal*, founded in 1844. He was in the prime of his professional activity and at the center of the advanced medical work of the South when he was taken ill and, in spite of travel and rest, died in 1849 at the age of forty years.

Dr. Harrison was small and refined, while Dr. Warren Stone was a huge, rugged man. The latter's unusual height and weight were intensified by his massive head and by the imposing strength of his features, which, though not handsome, were striking and impressive. He, the giant, and Dr. Harrison, the diminutive man, were the best of friends, differing from each other only in size.

Dr. Stone filled the position of demonstrator, lecturer and professor of anatomy during the first few years of the College's existence, and in 1839 was made professor of surgery, which chair

suppurative arthritis, in hepatic abscess, and in pyothorax. In the surgery of arteries he was an expert and was among the first to cure aneurism of the vertebral artery. In November, 1849, he operated successfully on a case of traumatic aneurism of the vertebral by incising the sac, turning out the coagulum, and controlling the artery by a graduated compress. For fourteen years at the Charity Hospital he operated without an anesthetic; but, although the *New Orleans Journal*, as well as others in the country, decried the use of ether, with its toxic powers and its patent, Dr. Stone welcomed it and showed his independence in February 25, 1847, by amputating the thigh of a man under ether. When chloroform was introduced, however, it became his favorite anesthetic and it is largely due to his professional teaching that it is the preferred anesthetic of Southern practitioners.

The Maison de Santé, one of the earliest pri-



J. H. HARRISON, M.D.



WARREN STONE, M.D.

he held until the year of his death, 1872. From Dr. Charles J. Bickham, Dr. Stone's ward student in 1855 and 1856, we get the flavor of personal reminiscence concerning his hospital work. "He was methodical and industrious, quick in perception, prompt in the execution of what he perceived to be his duty. His resources were unbounded. He never seemed to be taken unawares. His knowledge, tact and ingenuity were equal to the occasion and he never appeared so cool, self-possessed and grand in his whole nature, physical, mental and moral, as in the midst of alarming emergencies in surgery. In the midst of the most complicated and difficult operations, cool, calm and collected, he would promptly do his duty, at the same time lecturing and explaining to those present the minutest practical details of the case. In truth, every visit to the hospital was an ovation to him, which he acknowledged with becoming modesty, but which served doubly to inspire him. In his surgical clinics he taught the principles of drainage in

vate hospitals in America, was founded by Dr. Stone in connection with Dr. Wm. E. Kennedy in 1839 and twenty years later became Stone's Infirmary, where he continued his extensive work in general surgery. Although it was a private hospital, it was the established rule of the house never to refuse professional services on the score of poverty, and the charity dispensed by Dr. Stone at the Maison de Santé, according to one of his colleagues, "was of itself sufficient to elevate its author to that high rank among philanthropists which his well-known abilities had long since commanded in his profession."

As consulting surgeon to the Hôtel Dieu, Dr. Stone served for twenty-three years. The most important part of his professional life and work, was, however, his connection with the Medical Department of the University of Louisiana, which he served for thirty-eight years, from January, 1835, to April, 1872, when he resigned. As a teacher of surgery he was discursive rather than systematic, but though he was apt to be

led off the beaten track by an interesting case in hand his lectures were always instructive and convincing, especially to graduates.

Dr. Stone was not as well known by his writings as by his works, being reluctant about expressing himself in print. All the more important contributions that he made were published in the *New Orleans Medical and Surgical Journal*, and were pithy and convincing; but it was as a man, noted far and wide for his great wit and wisdom, and in his relation to the individual patient that he was so widely and affectionately known. Professor Samuel D. Gross once called him "The Great Commoner of Medicine," and so great was his name in his city and so deep was the love of the people of New Orleans for him that, when he died, December 5, 1872, the District Courts were adjourned as a mark of respect, the flags of the shipping stood at half-mast, and many of the stores on the main streets were closed at the time of the funeral.

Dr. Hunt, to whom the growth of the Medical College was his greatest interest, threw himself into the work of placing it on a solid foundation as a permanent State institution, giving up much of his large practice for that purpose. In 1845 he accomplished his end. When the new constitution for the State was adopted a clause was put into it establishing a State University and constituting the "Medical College of Louisiana" as then established as the Medical Department of the University. In 1847 Louisiana permitted the medical faculty to erect the first building it ever owned on a lot belonging to the State, on

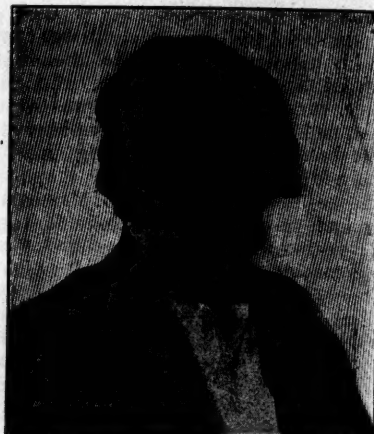


THOMAS HUNT, M.D.

two conditions: First, that the members of the faculty should give their services to the Charity Hospital without pay, instead of being paid therefor, as had previously been the case; and, second, that one beneficiary student from every parish should be admitted annually for the next ten years; and this was extended in 1853 to ten years more. The first condition has always been

fulfilled and the second condition was fulfilled for at least twenty years. The number of students increased from thirty-eight in 1843 to one hundred in 1846.

In 1844 a large amphitheater for surgical operations and for lectures was erected in the Charity Hospital at an expense of \$5,000, half of



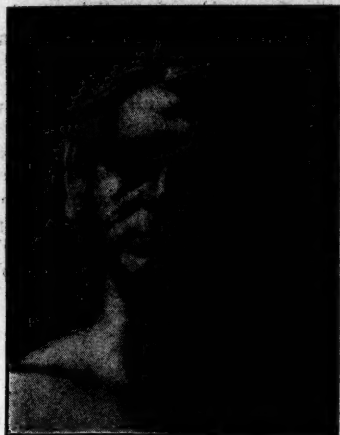
JOHN LEONARD RIDDELL, M.D.

which was contributed by the faculty. Various endowments and grants, besides the use of the lot and buildings, had contributed by 1859 about \$83,500; the number of students had increased from 100 in 1846 to 276 in 1858, and this increase would have been greater but for the fact that during these eleven years there occurred five of the worst epidemics of yellow fever that ever desolated New Orleans. In 1863 the Medical School had matriculated 4,119 students and had at the session of 1860-1 over 400 students. But when New Orleans was captured in 1862 by the United States Navy and Army, the Medical Department was obliged to suspend until the session of 1865-6.

Dr. Hunt, whose fortunes were shattered and whose health was feeble, left New Orleans for a time and went to Havana, where his reputation brought him a large practice, despite the fact that at fifty-four years of age he was obliged to learn a new language, and where he received a degree in the name of the Royal University of Havana.

In 1865 the Medical Department reopened its doors. The building had been occupied by the United States military and one wing used for a colored school in charge of the Freedman's Bureau was terribly dilapidated; the library and apparatus were damaged and the treasury was empty. But on his return from Havana Dr. Hunt interested himself in obtaining from the Legislature of 1866 a new appropriation of \$25,000 for the immediate needs of the College, and devoted himself to repairing the fortunes of the institution. The students came back, the faculty

was reorganized, but Dr. Hunt's efforts were terminated by his death March 20, 1867. The Medical College lost one who had been a man who had unselfishly devoted his energies to the practical advancement of medical science. He was an attractive lecturer; but his fame as an orator is only traditional as he published little,



A. C. LUZENBERG, M.D.

and the address which he delivered on "The Utility of Science," when he became dean, was one of the few that were printed.

Those who were chiefly instrumental in founding and in maintaining the college were Drs. Hunt, Luzenberg, Cenas, Harrison and Stone, aided as early as 1836 by Drs. James Jones and J. L. Riddell.

The longest active services were those of Dr. Stone, thirty-eight years; Dr. James Jones, thirty-seven years; Dr. Riddell, twenty-nine years; and Dr. Cenas, twenty-seven years.

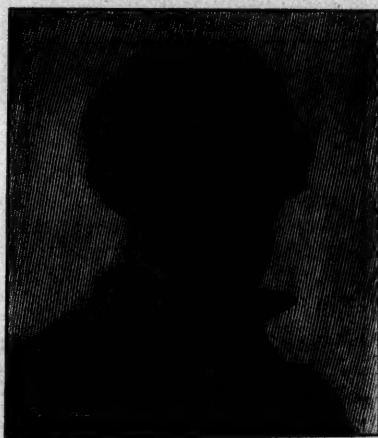
Dr. J. L. Riddell, who held the chair of chemistry until his death in 1865, was born in 1807 and came of a family that traced its lineage back through Scottish and Irish descent to the eighteenth century. He was not merely a professor of credit to his university, but also a naturalist of international fame. He was engaged in a scientific exploration of Texas when he wrote a "Symposium of the Flora of the Western States." He discovered many new species of plants and a new genus bears his name, *Riddellia*. He was an expert microscopist in the days of the instrument's development, and as the inventor of the binocular microscope is given due tribute in that literary mausoleum of the world's workers, the "Encyclopedia Britannica."

Dr. C. A. Luzenberg, though dying when a young man, was unquestionably a man of genius. He came to New Orleans at the gloomiest time of its medical history, a poor and friendless youth, and struggled ardently to bring to life a spirit of medical interest at a time when the medical societies of the city were lying dormant.

Owing to his indefatigable efforts a new society was formed—the Medico-Chirurgical Society of Louisiana. It held brilliant meetings at which the French and English physicians of the State met to exchange views, and it was undoubtedly the spirit of these meetings that caused a college building to be erected for the Medical School and that started the *New Orleans Medical and Surgical Journal*. So it was indirectly from Dr. Luzenberg and his brisk though soon spent energy that the men who outlived him received their impetus to found this medical school, which later formed the nucleus for the University of Louisiana.

The revivification of the Medical Department in 1865 was due to Dr. Richardson, who then became dean, aided by Drs. Stone, James Jones, Cenas and Hunt, and soon thereafter reinforced by Drs. Bemiss, Chaillé, Joseph Jones, Hawthorn, Mallet (now of University of Virginia), Lewis and Elliott.

Joseph Jones, M.D., LL.D., was born in Liberty County, Ga., in 1833, and was graduated as Doctor of Medicine from the University of Pennsylvania in 1855. He entered practice in Savannah, Ga., and it was not long before he was elected Professor of Chemistry of the Medical College of that city. Almost four years later he was elected to the same chair in the Medical College of Georgia. During the War he served as full surgeon in the Confederate army. Dr. Joseph Jones, a professor of chemistry in Nashville, Tenn., was in 1868 asked to take the chair of chemistry, to which clinical medicine was sub-

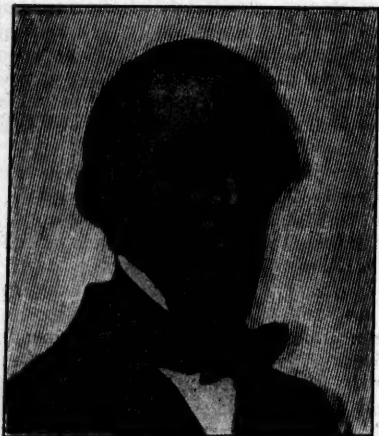


JAMES JONES, M.D.

sequently added at his request. He served for twenty-eight years, forming close friendships with the students and writing profusely. Three years before his death he was relieved at his request of the clinical teaching in the Charity Hospital, but continued his work and his practice in spite of failing health until his death in 1896. He strengthened the reputation of the

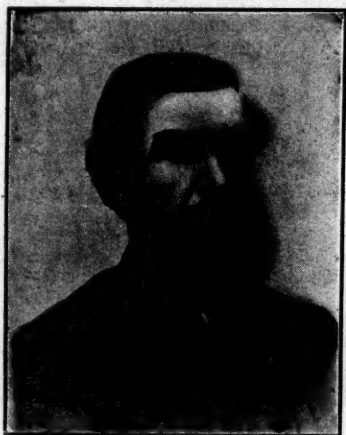
medical department as a center of learning by his profound, erudite and vast contributions to the literature of medicine.

Dr. Samuel Merrifield Bemiss, who held the chair of theory and practice of medicine from June 15, 1866, to the day of his sudden death



AUGUSTUS H. CENAS, M.D.

from apoplexy, November 17, 1884, was not only a celebrated physician, but a man of culture, refinement and great literary ability. He was the seventh son of Dr. John Bemiss, a great physician and a great theologian. Born in 1821 at Bloomfield, Ky., he grew up in the open country



S. M. BEMISS, M.D.

and laid, through his outdoor sports, a splendid foundation of health and vigor. His early education was superintended by his father, and his medical education was obtained from his uncle, then from the University of New York, from which he received his doctor's degree in 1845. From 1853 to 1863 Dr. Bemiss lived in Louisville

where he had a lucrative practice. From 1863 to the day of Lee's surrender in April, 1865, he served in various appointments as a Confederate surgeon in charge of hospitals. When he returned to Louisville he was elected professor of physiology and pathology in the University and entered again on a large practice. In the spring of 1866, however, he accepted a call to the chair of theory and practice of medicine and clinical medicine in the University of Louisiana. The affection and esteem of the citizens he left were replaced by those of the students and friends whom he made in New Orleans. He was an impressive, careful and interesting lecturer. As a clinical lecturer he was punctual in his wards and took the greatest pains with his students in teaching them the art of diagnosis, in which his superiority was very notable, and in making them self-reliant. In 1868 he became senior editor of the *New Orleans Medical and Surgical Journal*, and enriched the medical literature of



T. G. RICHARDSON, M.D.

the South by his contributions, his style and his medical perception. One of his greatest and most ardent undertakings was in connection with the great yellow-fever epidemic of 1878; he was appointed chairman of the commission for investigating its origin and spread, and was connected with the evolution of the National Board of Health and was a member thereof. His sudden death from apoplexy, November 17, 1884, cut him off at the age of sixty-three in the midst of his professional and editorial work.

A brief summary of Dr. Richardson's life, as a graduate of medicine, is requisite to an impartial estimate of the forty-four years of service given by him to the profession. Impelled by unselfish patriotism he gave for three years (1862-65) his great learning and skill as a surgeon to the soldiers of the South, to the greater credit of its medical service. As an educator he devoted thirty-eight years of active service to the instruction in anatomy and surgery of many thousands of medical students, to all of whom he

gave knowledge, inspiring them with regard for and devotion to the profession. During his thirty-eight years' service as a teacher of medicine he served three medical colleges, increasing their repute and efficiency. He gave to the Medical Department of Tulane University twenty-eight years of active service as professor, and twenty of these years as dean; during this service all the debts of the Medical Department were paid; he enriched its museum with the products of his own skilful labor; he guided the college safely through the darkest period of its history, and he greatly increased its usefulness and reputation. While administrator of the University he secured for the medical department and therefore for medical education and the profession very valuable benefits. While president of the American Medical Association he ably maintained professional reputation and dignity. He was the most influential founder of the State and Parish Medical Societies; and as a member of many other societies gave to them all greater influence and reputation. For seven years he edited medical journals and for many more years contributed to medical literature, always to the benefit of his profession. For twenty-eight years he was one of the visiting surgeons to the great Charity Hospital and no one did more than he to heal the many ills and assuage the many sorrows that always fill it. During forty years he practised surgery and medicine and inspired thousands of laymen with greater confidence in the medical profession as well as with respect for it.

Under the direction of these men and with the determination born of undaunted courage, the Medical Department made great strides to keep abreast of the advancing methods of the day. In 1887 by the valuable aid of the Tulane administrators and of Professor Ordway there was added a laboratory of practical pharmacy, with attendance therein obligatory on pharmacy students only; in 1889 the faculty established a microscopical laboratory for medical students, but a course therein was not obligatory until 1893. In this year not only were the anatomical and microscopical laboratories very much improved, but two new laboratories of chemistry and of operative surgery were established and attendance at these laboratories was made obligatory. Comparing past and present in the above particulars, it is found that, while formerly only nine different branches were taught and special courses given in two laboratories, now sixteen different studies are taught and courses are given in five laboratories. Formerly there were only eight or ten teachers, now there are forty-one; and yet more teachers are needed to teach other specialties.

The close of the war in 1865 found the college with many old books, but without catalogue, index or house-room for them; nor could a proper room be provided until the new building was completed in 1893. For several years thereafter the attention and funds of the faculty were

more urgently needed for other improvements than the establishment of a library; but this was done in 1896 and it has since been annually improved. Now the college possesses, in addition to some 1,500 duplicates and comparatively useless books in an annex, a well-organized and valuable library of reference, consisting of over 3,000 properly accessioned and card-catalogued volumes. While most of these books have been donated by members of the faculty, about \$2,000 has been expended in the purchase of others. This library is of great advantage to students and teachers. Another indication of progress is found in the facts that even until 1885 the medical faculty never had on its pay-roll more than five persons, while it now has twenty-seven; and, although the number of students is not twice as many as in 1885, the annual expenditures of the faculty have quadrupled. While the professors, graduates and students of the college



STANFORD EMERSON CHAILLÉ, M.D.

have most notably contributed to the great usefulness and repute of the Charity Hospital, the welfare of the medical department is still more dependent on the use of this hospital for the educational purposes that are secured by law to the college. Hence, every improvement of the hospital promotes the progress of medical education. These improvements have been great and numerous, but reference will be made only to the three that have most obviously contributed to the educational advantages of the Medical Department.

Two admirable buildings were erected in 1892 for out-door clinics, and the result has been that the number of the sick seeking relief at the hospital and educationally utilizable has increased from less than 10,000 to 30,000 annually. In 1895 a new amphitheater, one of the best in the world, accommodating more than 400 students, was erected on the site of the old amphitheater at a cost of \$44,130, of which \$3,000 was contributed by the faculty of the Medical Department. The benefits to the diseased and injured

and also the educational advantages of this building are incalculable. In 1899 the Milliken Memorial Hospital accommodating over 200 afflicted children was erected as an annex to the Charity Hospital. For this unexcelled building the profoundest gratitude, not only of the people of this city and State, but also of the faculty of our Medical Department, is due to Mrs. D. A. Milliken.

Little more can be done than to allude to various other causes that have influenced the prosperity and educational progress of the Medical Department. But, in addition to the influence of causes already indicated, such as "hard times," yellow fever and quarantines, medical examining boards and the Charity Hospital, there are two others, politics and donations, that have had most notable influence.

The Civil War, the result of politics, influenced prosperity far more than any other cause. From 1834 to 1859 the number of students increased from 11 to 276 by normal growth. There then occurred during the next three years an abnormal increase to 404 students in 1861, due to the political and sectional hostility that induced Southern students to abandon Northern colleges. War came, and patriotic students became soldiers in such number that the 404 students of 1861 were reduced to only 94 in 1862. The doors were then closed until 1865, for, during the three intervening years, all of the students and all of their teachers, not too old for service, were Confederate soldiers.

From 1865 to 1885 the number of students ranged from 230 to as few as 105 in 1875, about which time culminated the tyrannical and monstrous evils of the "reconstruction government," based on the negro, the carpetbagger and the scalawag and upheld by the victors for the spoliation and humiliation of the vanquished South. A patriot, who lost in the battles of the South both a leg and an arm, had, none the less, enough of him still left to lead those who were determined at every risk to supplant a most vicious with a decent government. This was at last accomplished, and the people of this State, the young as well as the old, should never forget the immense debt of gratitude due to their leader, Francis T. Nicholls, who, in 1876, became the governor, and is now chief justice of Louisiana. Despair was soon replaced by hope, and prosperity began to return to the State and to the Medical Department.

From 1875 to 1901 the number of students gradually increased from 105 to 426, but it required twenty-eight years to recover from the abnormal conditions resulting from war and politics, for it was not until 1886 that the college had fairly regained the number of students that had attended in 1858. During the many very trying years that the very existence of this college was at stake, the members of its faculty gave to it devoted and skilled labor for the remuneration usually paid to very ordinary clerks.

In 1845 a constitutional convention, influenced

chiefly by members of the medical faculty, obtained the University of Louisiana, and adopted as its medical department the Medical College of Louisiana, the parent of the present college. Not until 1847 did the Legislature execute the convention's decree to organize the university. This began its career with the college as its sole department. The medical faculty surrendered its building to the law department, then first organized, and was given a much larger building on a contiguous lot, where now stand the Crescent and Tulane theaters. This building cost the State \$40,000, and, in addition, the State gave to the medical department, from 1850 to 1858, \$43,500 for museum, apparatus and repairs. Of the \$80,500 thus contributed by the State war and time have left nothing except the lot, now the property of Tulane University, and the museum still the property of the Medical Department.

The Tulane University of Louisiana derives its name from the following facts: Paul Tulane, of Huguenot descent, a resident of New Jersey, accumulated in New Orleans a large fortune as a merchant of clothing. Having experienced the need of a better education, he, unmarried, childless and advanced in years, donated in 1882 over a million dollars for the higher education of "the white young persons in the city of New Orleans," provided that the laws of Louisiana should be so changed that the property donated (real estate in New Orleans) should be exempt from taxation. This was finally accomplished, but with delay and many legal difficulties, and, to accomplish it, it was deemed best to transfer to the Tulane Administrators the University of Louisiana and thus to found the Tulane University of Louisiana. This was done in 1884 by the Legislature of the State, and this law was ratified in 1887 by vote of the people and confirmed by the State Constitution of 1898.

In 1884 the University of Louisiana became the Tulane University of Louisiana. Since then the administrators have contributed in many ways to the welfare of the Medical Department, and if they have failed to do far more that might well have been done, this has been due to the imperative need of all of their inadequate income to establish an efficient collegiate department.

Since 1886 the medical faculty, besides paying all of the constantly increasing expenses, has appropriated to improvements \$17,500, derived from fees that, in less fortunate years, were all used to remunerate inadequately the members of the faculty.

In 1894 Dr. A. B. Miles bequeathed to the Medical Department \$10,000, a pathetic reminder of his devotion to his Alma Mater, and a very sad and inadequate substitute for the very valuable services that death deprived him of the power to confer as a most efficient and popular professor of surgery.

The fifth and only other financial aid given to the college was by far the most important ever contributed. Without it the educational progress

that has been and will yet be made would have been impossible. May 9, 1891, the wife of Dr. T. G. Richardson, valued professor, 1858 to 1889, honored dean, 1865 to 1885, donated a sum sufficient to erect a new building, greatly superior in all respects to the old one, and especially in providing all of the laboratories that have become indispensable to medical education and that the old building could not supply. A sufficient sum to equip these admirable laboratories was also given. The administrators took possession of the lot assigned by the State in 1847 to the Medical Department, and, in its place, provided, at an expense of \$35,000, a much ampler and better site for the new building. This was completed and occupied in 1893, and will continue, for very many years to come, to be exceptionally well adapted to its purpose. From this donation of Mrs. Richardson will very surely result the inestimable benefits of a better education to thousands of medical students, and, through them, relief to millions of those whom the anguish of disease afflicts and the shadow of death menaces.

Blessed is the university that has possessed such benefactors as Ida A. Richardson, Josephine L. Newcomb and Caroline Tilton; fortunate is the city that can add to this trinity such other benefactors as Deborah A. Milliken and Margaret Haughery, and discredited should be the city whose men may fail to honor these public-spirited women or may fail to imitate their beneficent examples.

THE CRAIG COLONY PRIZE ESSAY—SERO-THERAPY IN EPILEPSY.

BY CARLO CENI, M.D.,
OF REGGIO-EMILIO, ITALY;

DOCENT OF NEUROPATHOLOGY IN THE UNIVERSITY OF PAVIA; MEDICAL INTERNE IN THE PSYCHIATRIC INSTITUTE OF REGGIO-EMILIO.

(Concluded from page 442.)

Case IX.—Zelinda Brus eight years old, of delicate constitution. Birth normal. Her mother, during her pregnancy, suffered, as the result of a fright, from convulsive fits of an epileptic character. They were frequent and intense, especially in the last four months of pregnancy. After delivery the convulsions diminished by degrees, until at the end of a year they had disappeared entirely. She then entered into a state of melancholia, which lasted more than six years.

The child soon showed symptoms referable to the diseased state of the mother during gestation. The baby was scarcely five months of age when, without any determining cause, she was taken with a severe convulsive fit, which lasted about half an hour. The attack was preceded by a loud cry and a strong general trembling. After this fit the girl passed into a convulsive state which lasted more than two months, during which time the fits followed each other in series of four or five every day, with short intervals of a few minutes.

This dangerous state of things was followed by a period of almost four years, during which the convulsive fits appeared much more rarely and with in-

tervals of one or two months. But in the spring months they grew again considerably worse, preserving the same individual character as before.

After a long period of peace, about three years ago the convulsive fits again followed each other frequently, again coming in series, four or five every day, with short intervals, especially in the morning hours.

The girl was always lively and intelligent, but peevish and extraordinarily spiteful, particularly in late years. She always showed little affection and respect toward her parents. She often ran away from home, exposing herself to every kind of danger. Of late she has amused herself by breaking everything that comes within her reach, and often, without any cause, would rush aggressively at her companions, so that it became necessary to confine her in our institution. This was in May, 1900.

The girl presents no physical anomaly. The pupils are equal and react well to light. The tendon and cutaneous reflexes are exaggerated, and the muscular tone in general is increased. There is nothing remarkable in her sensory organs. Her weight a few days after admission was 20.700 kilograms.

On the 15th of June, 1900, the treatment by the serum-injections was begun. We began with a dose of 3 cubic centimeters, and we used the blood-serum drawn from the same epileptic who had furnished the material for the patient described in Case VII.

On the day of the injection Zelinda showed no reactionary symptoms. She was good-humored, had a good appetite, and only five fits occurred. But on the following day she felt distaste for food, suffered from slight headache, and instead of being fretful and active as usual, she was dejected and silent, a state which had not previously been observed in her. The fits grew much more numerous, having occurred twelve times in twenty-four hours. The temperature remained normal, but the pulse was frequent and weak. On the following day the girl had quite recovered.

On the 18th of June the injection was repeated with the same dose as before. She looked dejected and confused a few hours after the injection. The pulse was more frequent than usual and the temperature toward evening reached 38° C. No convulsive fit occurred that day. However, the girl suffered from much confusion of the mind, with slight symptoms of paresis of the lower limbs, attended by a remarkable increase of the tendon reflexes. All these phenomena soon disappeared, and on the following day the girl was in her normal condition. On the 19th the convulsive fits recurred nine times.

On the 22d of June we made another injection, again with the dose of 3 cubic centimeters. No noteworthy symptoms resulted. The temperature was normal and the fits came with intensity and frequency. On the day after the injection the only change noted was an exaggeration of her usual restlessness.

On the 26th the injection was repeated, but with the dose of 4.5 cubic centimeters. A few hours after the injection the girl looked dejected and sleepy. The pulse was weaker and more frequent than usual. The temperature rose to 38° C., in the night reaching 39° C.

Let us remark once for all that at the point of injection no reactive effect was ever observed.

On the 27th the condition of the patient rapidly improved. The temperature, which all day had been 38° C., returned to normal toward evening. The girl, however, was very much dejected all day, with short periods of great motor excitement, during which she made such disorderly movements as to suggest chorea. In these last two days there were no real convulsive fits.

On the first of July we injected 5 cubic centimeters of the same serum. It was tolerated without great inconvenience. The little girl was only more restless than usual. The fits followed each other as frequently and intensely as ever. The weight was 19.600 kilograms, a decrease of more than one kilogram.

Afterward, in the month of July, five injections of the same serum were given in progressive doses. At the last injection, performed at the end of the month, we reached 10 cubic centimeters at a dose without Zelinda presenting any trouble worth noticing. She was constantly good-humored and gave no sign of entering into the state of depression which followed the first injections. Her general condition was the same as before the treatment. The convulsions, however, came more frequently than formerly, occurring from five to ten times every day. She was still peevish, spiteful and disorderly. She weighed 20.500 kilograms.

August: As the epileptic manifestations, instead of getting better, get worse, in this month the serum injections are interrupted. However, she continues in the severe convulsive state of the preceding months. Besides, the motor crises are more frequent than formerly, reaching several times the number of twelve and more in twenty-four hours. Her weight is 20.300 kilograms.

September: Still no injections. The girl continues in the same severe condition as during the two preceding months, being very restless and having frequent convulsions. Her weight is 21.500 kilograms.

October: As a last and definitive experiment we begin injections again. Instead of employing the same blood-serum as was used previously, we now have recourse to the blood-serum obtained from another epileptic, as seriously ill as the first one. We again employ increasing doses. The girl bears the injections well, and presents no mediate disturbances. The dose of 10 cubic centimeters is soon reached, and in this month a total quantity of 32 cubic centimeters of serum is injected.

Although the little patient did not react to these injections with acute and direct phenomena, her general condition became worse again by degrees, with great increase of the motor crises. Towards the middle of the month she went into a severe convulsive state, having twelve to fifteen fits in the twenty-four hours. On the 26th of the month she developed a total paraplegia which came on suddenly. The girl was stupid in expression. She uttered but a few words and then with a peculiar hesitancy of speech. She had involuntary passage of urine and a copious salivation. The pupils were unequal and reacted feebly to light. The general reflexes and particularly the patellar ones were extremely exaggerated. Her weight went down to 19.700 kilograms.

This state of affairs lasted until the first days of the following November, when a general improvement began. The paralysis of the lower limbs disappeared rapidly, first on one side and then on the other. By the middle of the month the girl could walk without being supported and only presented a slight degree of paresis, but severe convulsions again occurred frequently.

In November, and especially in December, the motor crises also were remarkably diminished in number compared to what they were in the preceding months. The weight went up to 20 kilograms and later to 21.500 kilograms.

In January, 1901, the girl was in about the same condition as she was before the injections. In the whole month she had 147 convulsive fits, but they were not all intense.

In the ensuing months, until the end of May, her general condition remained almost unvaried. The motor crises were about five a day, coming especially in the morning hours. The convulsions have become rather less intense than before. Since the injections were definitively abandoned, the girl has received one gram of bromide daily.

	Diary of the Convulsions.	Weight in Kilograms.
May, 1900.....	125	20.700
June, 1900.....	148	19.600
July, 1900.....	262	20.400
August, 1900.....	357	20.500
September, 1900.....	248	21.500
October, 1900.....	327	19.700
November, 1900.....	180	20.800
December, 1900.....	159	21.200
January, 1901.....	155	20.700
February, 1901.....	140	20.600
March, 1901.....	148	21.300
April, 1901.....	130	22.000
May, 1901.....	145	21.500

Case X.—Maria I., twelve and one-half years old. She has no hereditary stigmata and never suffered from any important disease. She grew up healthy, showing precocious physical and intellectual development until the age of three years, when, in consequence of a fright through being forced to bathe in a river, she gave the first signs of her present disease. A few hours after the bath she had three fits, evidently of epileptic nature, which followed each other within the short interval of a few minutes. From this time the fits increased in number and severity. For the first two years the convulsions occurred once or twice a month, but then they grew by degrees more numerous, until they recurred four or five times a day, following each other at intervals of three or four days. The patient has now been for about three years in this severe condition, although the bromide treatment in very high doses has been frequently tried.

The convulsive fit is complete. It lasts from ten to twenty minutes with violent muscular shocks. It is always preceded by a feeling of anguish and faintness, attended by an intense and painful contraction in the epigastric region. For some time these *aure* have occurred with extraordinary frequency, from three to seven times in the twenty-four hours. But they are not always followed by convulsions, which, as I have stated, present some periods of two or three days' intermission. During the motor crises the girl becomes very cyanotic and often voids urine. The crisis is always followed by confusion and depression, lasting about one hour.

With the increase of the fits the patient's physical development was checked and her intelligence gradually grew more feeble. At the same time an evident change of character was observed in her, and from being good and gentle, she became wrathful, disobedient and spiteful to everyone. She never went to school and does not even know the alphabet. Being incorrigible and having got in the way of exposing herself to danger and to running away from home, she was admitted to this institution.

The patient is of backward physical development. Nothing remarkable as regards sensibility and motility. The reflexes are rather exaggerated. She is not very intelligent. She pays little attention to what happens about her, and answers questions more by signs than by words. Her dress is disordered. Her weight in the months of August and September, 1900, was about 31.500 kilograms.

October 1, 1900: The serum-injections are begun, and the bromide treatment is stopped. The serum is drawn from another epileptic and the total quantity injected in the first month is 48 cubic centimeters. From the onset the patient tolerates the treatment well. Both the motor and sensory crises are reduced in this month to about one-third of what they were in the preceding month. Yet their character is the same as before. The nutrition of the girl rapidly improves, so that her weight increases to 36.600 kilograms.

November: Sixty-five cubic centimeters of serum in all are injected. The motor crises are limited to five, all of which occur in the last week of the month, after about thirty days of complete pause. Meanwhile the girl's temper is much changed. She has grown good and mild. She has a rosy color and looks livelier and more intelligent. She dresses with more care, and spends the day with the sewing-women, for she wishes to learn to sew. Her weight increases to 38 kilograms.

December: The total quantity of serum injected is 80 cubic centimeters and the girl gets on very well. Her weight increases 1 kilogram more. She has five motor crises and two sensorial ones. The crises appear to be less intense and shorter than formerly. The girl behaves in an exemplary manner and looks healthy. Toward the end of the month she begins to go to the school of the institution, where she soon shows herself eager and diligent.

January, 1901: The quantity of the injected serum is 65 cubic centimeters. Her condition remains unvaried. The number of crises is about the same as in the two preceding months. She weighs 40 kilograms.

February: Injected serum 70 cubic centimeters. While the general condition is still very good and the weight reaches 41.500 kilograms, the epileptic crises on the contrary become a little more numerous.

March: Total serum injections reach 80 cubic centimeters. The general state of the patient remains unvaried and the crises recur with the same frequency as in the preceding month. Toward the end of the month the girl has her menses for the first time, although she is but thirteen years old. They continue afterward regularly.

April: The injections are stopped. The girl continues to be as improved as in the preceding months.

May: Her weight is 39.700 kilograms, and the number of the crises remains much smaller than it was before the treatment. She looks like a full-blown, healthy, intelligent girl, quite different from what she was formerly. Now she is looking forward to the time when she is to return to her family.

DIARY.

	Convulsions.	Sensorial Crises.	Weight in Kilograms.
August, 1900.....	48	110	31.600
September, 1900...	43	125	31.300
October, 1900.....	14	35	36.600
November, 1900....	5	—	38.000
December, 1900....	5	2	39.000
January, 1901.....	6	2	40.000
February, 1901....	15	7	41.500
March, 1901.....	15	6	39.600
April, 1901.....	10	6	39.800
May, 1901.....	8	5	40.100

A general glance at the histories of the cases of epilepsy in which the new curative method has been tried, quickly convinces us that the great difference in the results in the different individuals constitutes the part of these researches which most demands our attention.

Indeed, if we consider the results so far obtained, we may divide the patients into two well-distinguished groups, viz., those with a positive result and those with a negative one; for, while this method proved very successful in some cases, in others it did not suit at all.

Let us see what patients belong to these two groups and what clinical facts distinguish the ones from the others, during the long period they were under observation.

We must remark first of all that, of our ten patients of different ages chosen expressly from among the severest forms of epilepsy, eight belong to the first group. They are represented by Cases I., II., III., IV., V., VI., VIII., and X., in all of which distinct advantage was derived from the treatment, though in different degrees. Two cases belong to the second group, viz., Cases VII. and IX., in which the serum-injections not only were not beneficial, but were contra-indicated.

Now, I will state the kind and degree of benefit the epileptics of the first group derived from the treatment. We shall see later what clinical phenomena of scientific interest were presented by the epileptics of the second group.

Group I.—Positive Results. Cases I., II., III., IV., V., VI., VIII., X.

In order to distinguish the cases with positive results from those that did not receive the least advantage from the treatment, two principal facts demand attention, viz., the manner in which the patients reacted to the first injections and the nature of the final results. Both of these phenomena were often remarkably different in different individuals. As to the manner in which the patient reacted to the first injections, we observe that some patients accommodated themselves soon and easily, without experiencing the least inconvenience, while others exhibited at first a peculiar intolerance.

The former, although at first unchanged, soon showed a more or less remarkable and progressive improvement. Thus it was with Cases III., IV., V., VI., and X. The two patients described under Cases I. and II., after the first injection, exhibited the phenomena of an acute intoxication which consisted chiefly in a rapid diminution of weight, and in an increase in number and intensity of the motor crises.

One of them (Case I.) exhibited besides in this period continued drowsiness, which was not usual in her. It lasted about five days and was attended with evident symptoms of paraparesis.

The period of accommodation being over, both of these patients entered, in about a fortnight, into the period of general progressive improvement, into which the other six patients of this group passed directly; so that within a month from the beginning of treatment all the epileptics of this group had been benefited. The gradual improvement from the first month, in nutrition and in weight, the progressive and often remarkable diminution of organic disturbances in general, and especially in those affecting digestion and circulation, gave incontestable proofs that these epileptics were undergoing organic modifications that gave promise of great future success.

To give an idea of the enormous influence that the injections had upon the general state of the patients, I will recall the deep modifications that took place in Adolfa C. (Case I.) in a few months. After an initial period of crisis during the accommodation to the first injections, though we had stopped by degrees all the symptomatic drugs she had been taking so long, the patient passed quickly into a state of physical well-being that surpassed all our hopes. The girl soon

gained 6 kilograms. She lost by degrees the habitual cyanosis of the face, her complexion becoming even florid. Her skin grew everywhere soft, bright and rosy, even in the parts that had been covered with a painful erythema. It will be remembered that this erythema had lasted a long time and had resisted all treatment. The circulation became active again; all the severe digestive disturbances disappeared and during the third month of treatment the menses returned, although they had been absent for more than one year. The obstinate insomnia also disappeared in a short time. The girl was like a healthy person.

We have a similar case in Maria I. (Case X.), epileptic for nine years and physically much inferior to the preceding patient. In consequence of the injections a change was so rapidly effected that after four months the girl looked much better and was about 10 kilograms heavier. In the fifth month of the treatment the menses appeared for the first time and have continued regularly.

In Cases VI. and VIII. we may observe still more convincing proof of the extraordinary influence the serum-injections may have in stimulating nutritive change, even to exaggeration. The physical condition of these two little patients (Armida Gib and Albertina Bus) changed so much in a few months that the girls were not to be recognized. In seven or eight months they doubled in weight and, their complexion becoming florid, they looked like healthy persons. The former began to menstruate regularly when twelve years old. She weighed 60 kilograms.

The improvement in general nutrition which took place in all the epileptics of the first group was not always the same in manner or degree. In some patients there was gradual improvement from the onset which ceased after a few months. In others the improvement was more prompt and continuous. The former exhibited pauses and slight relapses; the latter went progressively and steadily forward.

The first mode of improvement is especially characteristic for those patients who attained a certain degree of benefit from the treatment, but then remained stationary, although the injections were continued. The weight that these patients gained during the period of reaction, that lasted from six to seven months, oscillated between 6 and 10 kilograms.

The second mode of improvement, *i.e.*, that characterized by a rapid and progressive gain, was shown by those epileptics who, at least till the present, give us reason to hope for a real recovery. Since the treatment of the first two or three months, in addition to the total disappearance of all epileptic manifestations, they grew from 10 to 20 kilograms heavier, an increase that did not cease even after the treatment was stopped. Cases VI and VIII. gave this result. The former patient has now been more than one year in the state of a perfectly normal person. Before the injections she weighed 34 kilograms. She now weighs 60 kilograms. In Case VIII., the patient, after about six months of general well-being and of total suspension of the epileptic manifestations, had a slight and transitory relapse caused by a bronchitis. She, too, recovered, after the disappearance of the bronchial disturbances.

An idea of the manner of improvement in general somatic functions in consequence of the treatment is given by Case V. In this patient we saw a gradual disappearance, which in time became almost total, of a complication of the severest disturbances of sensibility, motility, general reflexes and of vegetative life.

The quick transformation in the psychic personality of the patients, even of those in whom degeneration and defects in intellectual activity were profound, ex-

cites the greatest interest. Even in the severest cases, as for instance in Cases III. and V., we have witnessed a real, though slow, arousal of the psychic powers. The recovery of the intellectual and affective functions was always last, appearing after the physical condition had reached normal or the highest improvement possible.

A forceful example of the influence that serum-injections may have in arousing the intellectual faculties of epileptics is given us by Armida G. (Case VI.). This patient entered our asylum when eleven years old. She did not know the alphabet and seemed almost completely demented. In her general state she was like a brute. After a few months' treatment she was able to go to school and proved to be fairly intelligent.

Even in facial expression the patients underwent remarkable changes. This was especially true for Cases II., VI., VIII., and X. As the patients improved physically, they became commonly more active and of more normal appearance. At the same time, they grew more and more orderly, particularly in regard to dress. As to the girls, they showed in time an inclination to dress well, perhaps even better than their rank and age justified.

Generally our epileptics who formerly were tiresome, peevish and even aggressive, became of a milder and more sociable temper and behaved like normal persons. But unhappily these benefits were not always permanent.

In the two patients described in Cases VI. and VIII., besides the rapid improvement in physical and psychic condition, there was a complete disappearance of all epileptic manifestations. In them there seemed reason to hope for a real recovery. But the other six patients, after a few months of more or less remarkable improvement, entered into a new stage, which is probably the beginning of a relapse, though it has not as yet proved so.

The following are the principal characters of the descending parabola of the general condition of these six patients. It proceeds with fairly distinct interruptions.

The increase in the number of the motor crises, though the patients may continue to show for some months a physical and psychic gain, has been in every case the first symptom. In adults this increase generally happened much sooner than in young people. I think that in these latter it may be possible, by continuing the injections, to prolong the improvement. In the older patients, however, the injections soon lose their effective power and are of no use in warding off a relapse. However, in both cases the number of motor crises remains smaller than it was before we began the injections, one and two years ago.

For example: Adolpha Cam. (Case I.), a severe epileptic for many years, had convulsive fits that used to come a hundred or more times a month. These were reduced during the treatment to an average of three or five a month. On stopping the treatment the fits soon increased to about twenty a month. The girl has now been in that condition for more than one year, that is, since she returned to her family.

The same may be said of the lad Paul Rov. (Case II.), whose crises, from an average of fifty and more a month, went down to three or four during the six months of treatment. About two months after the patient had returned home, that is, two months after the interruption of the injections, the number of crises increased again but was still much smaller than at first. This fact is still more evident from the complete diaries of the epileptics who are still under direct observation.

In general, within a few months after the injections

were suspended, we began to observe a deterioration in the physical condition of all these patients, which in the severest and oldest cases was soon followed by a return of the psychic and psychosensorial phenomena.

Neither this new physical deterioration nor the re-appearance of the psychic and psychosensorial phenomena has as yet assumed the dimensions of a total relapse. In no patient has the body weight descended as low as it was before the injections; and even the psychosensorial phenomena have not yet attained the severity they had before the treatment.

Case V., that of Pius Rom., who stopped the injections about one year and a half ago, is a pertinent example. For nearly one year the monthly number of fits was from five to six a month, while in the preceding years it was from twenty-eight to thirty; the weight is 6 kilograms greater than it was before treatment and the psychic state is much better than before. The patient still has periods of mental confusion attended with hallucinatory phenomena, but they are short, transitory and less intense than previously. He is fairly orderly and has given no sign of falling again into the brute state he had long been in before the treatment and in consequence of which he had been shut in the department of the filthy.

We may say the same of all the others; for instance, of Adolpha Camp., whom we have mentioned in speaking of the motor crises. This patient, having returned home in consequence of the remarkable improvement gained through injections, suffered some months later from an increase of the fits. But the manifold psychic and psychosensorial phenomena that first had caused her to be confined in this institution have not as yet returned.

Therefore, we may say that even in the cases in which the benefits obtained by serotherapy, consisting in an improvement in the general condition of the patients or in a more or less remarkable diminution of all epileptic manifestations, are only transitory, they are none the less of sufficient duration to commend the treatment to general consideration.

Group II.—Negative Results. Cases VII. and IX.

Two cases belong to the group of negative results, Cases IX. and VII. These patients not only did not give any sign of improvement after the serum-injections, but grew worse physically and mentally. Both of these epileptics reacted to the first injections in the same manner as two of the cases belonging to the group of positive results. In passing through the period of accommodation to the treatment, they grew worse, especially as to the epileptic phenomena. They gave, however, a very different final result from those of the group of positive results. For in these latter it was a question of a transitory crisis of accommodation with acute phenomena followed by a state of general benefit, while the former gave evidence of a slow progressive intoxication which was characterized by an increase in number and intensity of the epileptic phenomena.

Charles M. (Case VII.) got so slowly worse in the first week of treatment that we hardly perceived it. He seemed to be unaffected by the injections. In the second month of treatment, however, he began to exhibit a slight diminution in weight and an increase in the epileptic manifestations.

Zelinda Br. (Case IX.) after the first injections soon developed what I call a crisis of accommodation. It had the characters of an acute and alarming intoxication with elevation of temperature and a rapid increase of the epileptic phenomena, especially of those of psychic nature. But even in this case the acute phenomena soon disappeared and the little patient,

after a few weeks of peace, during which her general condition was the same as before treatment, grew worse. Her weight diminished and the epileptic crises increased alarmingly.

On suspending treatment these two patients by degrees returned to their original state. Evidently, therefore, the injections had been the direct cause of all the disturbances. I will not speak now of the importance that these negative results have from the scientific point of view. But I will observe that from the different and contrary manner with which patients react to injections we may draw important prognostic points as to the final issue of this treatment in epilepsy.

I have already tried to call attention to the remarkable difference existing between the quick, imposing, progressive increase in weight of the epileptics considered as recovered, and the slow, interrupted and limited way in which the weight increases in those patients who only improved. As just observed, the epileptics who received no benefit from the treatment (Group II.) not only never exhibited an appreciable increase in weight, but when the injections were continued they lost in weight. These three peculiar modes of reaction have preserved their distinct characters so constantly that we may, perhaps, depend on them in making a prognosis, though my observations are perhaps too limited to permit inferences of a general nature.

Let us see what are the causes of such different and contrary effects in the beginning as well as in the final issue of the treatment; and whether any clinical facts or anamnestic data in the individual cases can be regarded as helpful in prognosis.

Now the question arises whether the causes of such different and opposed modes of reaction on the part of the patients suffering from epilepsy and undergoing the same treatment exist in the subject himself or in the epileptic who furnishes the material for the injections.

We can only have an entirely satisfactory answer to this question in the light of further observations, and especially observations on younger subjects, who have furnished the most decisive and interesting results from every point of view, both practical and scientific. Still I think we can even now obtain some data from the actual results before us as evidence. It certainly seems as though the different and opposite results so far obtained have their source in the organism of the patient injected and not in the organism of him who furnished the serum.

Here are briefly the facts leading us to this inference. First it must be remembered that our epileptics, though they all were treated in accordance with the same principle, underwent two methods of treatment which, in appearance, at least, were different. Some patients received injections with serum drawn from the blood of other epileptics, while in others auto-serotherapy was the method. In Cases III., IV., V. and VII., this latter method was employed. The results were good only in the first three cases. In these there was marked improvement without the least inconvenience. But in the fourth case (Case VII.) it was quite different, for the patient grew progressively worse, the weight diminishing and the epileptic manifestations growing considerably worse. He exhibited none of the acute phenomena observed in some other cases, but continued for some months to get slowly and progressively worse. We may then suppose that the individual organic condition of this patient could not tolerate an artificial increase of the toxic principles already circulating in his organism and that this increase constituted the most direct cause of the deterioration.

Later we tried in this patient injections of serum derived from other epileptics, but his condition again grew worse and worse. It is then evident that the cause of the negative result in this case is to be looked for in the patient himself.

We arrive at the same conclusion and perhaps in a still more evident way, when we compare the results in the Cases VIII. and IX., in which the injections were of serum drawn from the blood or other epileptics. These two patients were girls of about the same age, degenerated physically and severely epileptic. For two consecutive years the fits were intense in both, and occurred 100 and more times a month.

Now these two patients were almost contemporaneously subjected to injections of blood-serum drawn from the same epileptic. From the beginning they gave very different and contrary results. The first, Albertina B., entered soon into a state of progressive well-being, which was marked by a quick diminution and then by the complete disappearance of all epileptic manifestations and later by great increase in weight. On the other hand, the second, Zelinda B., reacted to the first injections with alarming symptoms of an acute intoxication (elevation of temperature, great depression followed by psychomotor excitement, severe confusion of the mind, etc.). She entered later into a slow and progressive period of getting worse in her general condition, with diminution of weight and a great increase of the epileptic crises. After about two months she bade fair to enter into a continual epileptic state.

The evident contrast in these two girls of the effects of injections with blood-serum of the same origin shows, I think, that the peculiar condition of the patient constitutes the chief cause of the different final issue.

What, then, are the causes leading to such contrary results? In several important ways the history of the patient helps us answer this question. My studies have convinced me that between certain anamnestic data and the final issue of the treatment there are constant and interesting relations.

The hereditary nature of the disease, the age of the patient at the time of its appearance, and its duration before treatment have begun are the important points.

Thus of our patients, the ones in whom the result was negative were cases of hereditary epilepsy. The two negative cases are that of Zelinda B., nine years old (Case IX.), who, born of an epileptic mother, exhibited severe symptoms since three months of age; that of Charles M., forty-six years old (Case VII.), had severe hereditary stigmata on both paternal and maternal side, and was an epileptic from early childhood.

In the eight others whose epileptic manifestations ceased for awhile or permanently, or who grew only better, hereditary stigmata were either absent, or, if present, the epilepsy had manifested itself late in life and commonly from an accidental cause.

The benefits these patients received from the treatment were generally more evident in those cases in whom the epilepsy was recent than in those in whom it had existed for a long time.

The two cases considered cured had no hereditary precedents. In them the first epileptic symptoms appeared about three years before treatment. In the other six cases that only grew better, the disease had existed for ten or twenty years and even longer. One of these patients (Case II.) was epileptic for five years only, but he was also the only one with severe hereditary predisposition.

Thus, from our cases it is evident that the hereditary forms that manifest themselves from childhood are the

least suitable for the serum treatment, while the acquired forms of recent date give the most satisfactory results.

Further observation must decide whether the conditions above mentioned are the only ones that have to do with the very different ways in which epileptics react to the treatment. I think, however, that both the positive and negative results obtained by my experiments have great importance from any point of view.

The next question is, Is the effect obtained in epileptics due to a property peculiar to the serum of epileptics or to a property of human serum in general? To answer it control experiments are necessary. Accordingly, I subjected other epileptics to a treatment of continued injections, using the same method as before, but getting the serum from normal persons. In all six patients, chosen from the severest forms of epilepsy, were injected. I will limit myself to a short résumé of their histories and the results.

These subjects of control were as follows: A very severe case of a patient, thirty-seven years old, with hereditary epilepsy; four cases of patients from twenty to forty years of age, with acquired epilepsy that had existed for from ten to twenty years; and the case of a patient, fourteen years old, with acquired epilepsy of five years' duration. All received for three months injections with blood-serum drawn from healthy persons. None of them ever exhibited a diminution in the number of the attacks, or any improvement in health whatever.

In one case of acquired and inveterate epilepsy, there was a slight increase in the morbid phenomena. In all others the number and intensity of the crises did not change during or after this period of experiment. Countenance, character and mental state remained unchanged.

As to general nutrition, in one case, that is, in the youngest patient, who had been epileptic only five years, there was an increase of about 4 kilograms in weight. In the case of hereditary epilepsy and in two cases of acquired epilepsy, the state of general nutrition and the weight remained practically the same as before the injections.

The two cases of acquired and inveterate epilepsy grew worse generally, and in a period of three months diminished from 3 to 6 kilograms in weight. One of them, as already stated, exhibited also a slight increase of the epileptic crises. In about one month after the suspension of the injections, however, these two returned to their normal condition.

The contrast between the results with injections of the blood-serum of epileptics and those obtained by injections with serum of healthy persons, makes it evident that the power of determining the deep modifications in the condition of epileptics resides in the serum of the epileptics themselves and not in human serum in general.

However, although injections with normal serum have never exhibited and effectual anti-epileptic power, they have a certain analogy with injections of epileptic serum. The analogy is that some cases grew worse in consequence of injections with epileptic serum as did two from injections with the serum of normal individuals. Such an analogy, however, does not weaken the conclusion already drawn, namely, that the property of determining deep modifications in the symptoms of epilepsy belongs to the serum of the epileptics themselves.

Through injections with the serum of healthy persons we never obtained the clinical picture of acute or chronic intoxication such as we obtained with epileptic serum. It is to be noticed that while both acute

and chronic symptoms of intoxication by epileptic serum were characterized by an increase in number and intensity of the epileptic crises, the injections with normal serum caused a progressive deterioration in the general nutrition of the patient but without much increase in the epileptic crises. Also the two patients that grew worse in consequence of the injections with normal serum were restored to their habitual condition in about a month after the suspension of the injections; but the two patients that got worse after the injections with epileptic serum went several months before they returned to their normal state.

Although the number of negative results are small, the conclusion to which they would seem to point agrees with the modern autotoxic theory of epilepsy. Otherwise, we would have to believe that the same soluble toxic principles, now considered as the proximate cause of epilepsy, circulate in healthy persons and in epileptics. It may be that the epileptogenous principles are but exaggerations of physiological principles circulating in healthy individuals, for certain phenomena occurred in epileptics from the injection of normal serum. But if these are the same in kind, they certainly differ widely in degree. That is, however, largely hypothetical.

It seems in every way probable that the cause of the different and opposite effects obtained by injecting epileptic serum exists, for a great part, at least, in some organic condition of the patient into whom injections are made, and not in the person furnishing the serum. The same may be said of the injections into epileptics of serum of healthy people. This past month I have employed in my control experiments, both in the cases that remained indifferent to the injections and in cases in which a bad reaction occurred, the serum drawn from different persons than those who had furnished the serum in the preceding months. In both the results were the same.

This simple observation indicates that even the blood-serum of healthy individuals, as well as that of epileptics, contains some soluble principles that generally do not act like toxins when injected into the organism of epileptics, but that they may so act when the injected epileptic exhibits peculiar organic conditions which are altogether unknown to us.

Though the toxic effects determined by epileptic serum may be more severe and of a more specific character than in those determined by the serum of healthy persons, they nevertheless furnish a point of intimate analogy between the soluble active principles circulating in human blood in general and those circulating in epileptics. Such an analogy supports the opinion that the epileptogenous agents are but exaggerations of the physiological products that circulate usually in human blood.

It is only an hypothesis, and I advance it cautiously. But I wish to emphasize what may be of importance in the etiology of epilepsy, that in some cases injections with epileptic serum are contra-indicated.

Of course, the greatest interest of my experiments centers about the cases that have undergone a diminution or a complete disappearance of all epileptic phenomena. What meaning and value can we give to these results?

I think, above all, that the facts we have now before us cannot be interpreted by assuming an occasional immunity to epileptogenous toxins. According to the opinion we have of immunity, that it is conferred by habit and that it is generally obtained by progressive doses of mineral or vegetable poisons, we may suppose from our experiments that repeated injections with epileptic blood-serum may determine in other epileptics

an increase of resistance to the fits. But we cannot go so far as to admit that such immunity would result in a complete and lasting suspension of all epileptic manifestations, as occurred in two of our cases.

Absolute immunity to a toxic agent conferred by habit would be strange and inconceivable, especially in such cases as ours in which it would have had to be produced by a small and artificial increase of a toxin that had long circulated in the organism.

Immunity by habit could, moreover, explain neither the deep modifications in nutrition nor the quickness of the therapeutic effects.

The question of a probable process of vaccination also presents itself. The modification in nutrition, one of the most important effects of our serum-injections, seem to correspond to the process of immunization itself; for we know from pathology that, for the greater part, resistance due to any form of vaccination whatever, is but the expression of nutritional changes. But the nutritional modifications in our patients appeared so quickly and to such a marked degree that I think even this last hypothesis does not suffice to explain the final results. For immunity, caused by vaccinating principles, usually proceeds very slowly and takes many days to establish itself.

The relation between the nutritive modifications and the immunity conferred by serum-injections has, in our cases, been more intimate and direct than we can imagine in any process of vaccination. The improvement in nutritional conditions, inferred from the considerable increase in weight of the patients, most frequently preceded the diminution in epileptic crises. In every process of immunization, however, resistance conferred upon an animal keeps pace with the nutritive modifications. These latter, moreover, are never so pronounced as in our epileptics. Further, if the epileptogenous toxic principles possessed vaccinating properties, an epileptic bearing these principles in himself would at length undergo a natural auto-immunization, and such immunization could not be obtained artificially by injecting into another epileptic some cubic centimeters of blood-serum that contains the same inoculating substances as his own blood contained. Finally, if epileptogenous principles have vaccinating properties it is impossible to understand how these properties may, in some cases, cause the symptoms of epilepsy to become progressively worse.

Therefore, the data we possess upon the mechanism of action of the active principles contained in the blood-serum of epileptics speaks against their having a vaccinating power; on the contrary, I think the same data demonstrate that it is probably a question of principles that are restoring and therapeutic at the same time. This opinion is sustained, as I have remarked, by the quick appearance of the beneficial results and still more by the intimate relations of time and degree between individual results.

I have become fully convinced that the improvements in general nutrition represent the return to normal of the organic elements. In all probability these elements constitute the seat of elaboration of the epileptogenous toxic principles and thus represent the anatomic basis of epilepsy itself.

The mediate influence of the organic modifications upon the final therapeutic result of injections has been too evident and constant in our epileptics to draw a different inference.

Therefore, the nutritive modifications in the present experiments are not due (as is now generally admitted for the different processes of vaccination) to the properties that the active principles have of modifying the nutrition and of allowing the cells to make elements

pernicious to bacteria or their products; but they are due to a direct action exerted by an active principle on the cells concerned in metabolism which are already in physiopathological conditions. The morbid condition of an epileptic would thus be subordinated to the said organic modifications, and the active agent contained in the serum would act in an indirect manner only.

This active principle of the blood-serum of epileptics, which is capable of determining in epileptics themselves a restoring and therapeutic action, may then be considered only as a principle which stimulates metabolism. So that henceforward it cannot be confounded with the anti-toxic principles of immunizing serum of microbic nature, which are the chief basis of modern serotherapy.

The mechanism of action of epileptic serum and those of microbic serum and of antitoxic serum are too different to permit their active principles being regarded as of the same nature, though they may seem to be so at first sight.

The antitoxic theory in the chemical and neutralizing sense, as maintained by Ehrlich and his disciples, as well as in the biological immunizing sense as maintained by Bouchard, Metchnikoff, Charrin, Roger, Vaillard, Roux and many others, could not at all explain the negative results obtained by the injections of epileptic serum, and to which we attach great importance for the pathogeny of epilepsy. The opinion that a stimulating principle is contained in the serum of epileptics, on the other hand, helps to explain the positive results and the negative ones also.

We have already proved that the chief cause of the different and opposite results secured by this new serotherapeutic treatment is dependent upon some peculiar and individual organic conditions in the epileptics who undergo it. We have already remarked, also, that some intimate relations of cause and effect must exist between the epileptogenous agent and clinical results. Therefore, I think it will now suffice to subordinate the action of this active stimulating principle to the peculiar pathological conditions of the elements of the changes in the various epileptics, in order to find the reason, for which the said continued injections may produce effects of such a different and opposite nature.

The influence of the individual pathological conditions on the final results may be due to the former being in some cases of a character to allow to the cellular elements (representing the probable anatomical substratum of the changes and of the epileptic manifestations) a physiological reaction to the mentioned stimulus; while in other cases the cellular elements are in a condition to deprive them of all power of a physiological reaction. In the first case we would have a positive reaction with the anatomical elements returning partially or wholly to their physiological state, i.e., a diminution or disappearance of the circulatory epileptogenous toxic principles. In the second case, on the contrary, the reaction would be negative. The anatomical elements, under the influence of the stimulating principle, would get a pathological hyperactivity with a consecutive hyperproduction of the epileptogenous principles. These two cases would show clinically a diminution or total disappearance of all epileptic manifestations or an increase of them. Illustrations of both of these cases are furnished by our experiments.

Even the benefits of auto-serotherapy in epilepsy would find a plausible explanation by assuming a stimulating principle. In auto-serotherapy it seems to me that both the state of acquired immunity for accommodation or for inoculation, and the action of an antitoxin are to be *a priori* excluded. For the immunizing principles as well as the antitoxic ones, if they circu-

lated in the organism of an epileptic, should exercise their beneficent action when circulating in the organism of the individual in whom they were formed. Also, were they really immunizing or antitoxic principles, they would never cause the general condition of the individual in whose organism they were elaborated to get worse, as we have seen in one case.

We must then admit even here a stimulating principle to metabolism, as we have done for the other cases. For it is no longer the serum of one epileptic which exerts a stimulating power to the metabolism of another epileptic, but the same blood-serum, inert in its physiological state, which now possesses that property. So we must believe, in general, that the serum of epileptics receives its stimulating property from the organisms of epileptics only at the moment it ceases being a physiological vital humor; that is, when it ceases circulating in the body and comes in contact with the external air.

We are then obliged to admit an active principle, that, in the physiopathological condition of an epileptic, exists in the blood in a latent state only. It is soluble, is perhaps bound to the anatomical elements of the blood, and in its free state grows active when these elements cease living.

Therefore, I think the theory of a stimulating principle, which, depending perhaps on a nervous influence, causes the manifestations of epilepsy to get better or worse, is the most reasonable to explain the different results I have obtained by continued injections with serum.

There remain a few words to be said concerning the meaning of the symptoms of the acute transitory intoxication observed in some epileptics. They appeared in direct consequence of the first injections with serum drawn from other epileptics. The nature of these symptoms, their sudden appearance and disappearance, and their transitory character are, I think, sufficient to indicate a crisis of accommodation to a new poison introduced into the organism. Therefore, it seems impossible to confound the cause of these acute direct phenomena with the causes of the chronic slow and progressive deterioration observed in other cases as the final results of continued injections.

That these crises of accommodation were never remarked after injections with blood-serum of healthy individuals (which might have been supposed after Bouchard had demonstrated that injections with blood or with blood-serum could not produce any toxic manifestations when they are made into animals of the same kind) is a direct demonstration of the presence of a poison which is soluble in the blood-serum of epileptics, but which does not exist in the blood-serum of normal individuals. These crises of accommodation characterized by motor and psychical epileptic manifestations, are not to be confounded with such accidents of modern serotherapy as polymorphic eruptions, exanthems and arthralgias. In the two cases the phenomena are different in nature and pathogeny. The accidents caused by immunizing serum are to be ascribed, at least according to some authors (Landouzy, "Sérothérapie," Paris, 1901), only to the coefficient of the toxic power peculiar to the serum of the animal that has supplied it. These accidents are explained by the introduction into the human body of a serum obtained from an animal of a different kind. In epileptics the crises of accommodation are caused by serum of the same kind, but which has been drawn from an individual in a pathological state.

Only one objection can be made to this interpretation of the crises of accommodation. It is this: If it is really a peculiar toxin of the blood of epileptics that

determines the severe symptoms of an acute intoxication, why does it not do so in all epileptics undergoing these injections? It was noticed only in a few.

We answer this by saying that the individual organic conditions of the patient into whom the serum was injected may entirely modify the characters and intensity of the phenomena of reaction to the toxin of which we are speaking.

We have already seen that the positive or negative final result depends almost exclusively on the individual organic conditions of the epileptic treated. Now I think it even more justifiable to maintain that the different modes of reaction and accommodation to a toxin that is introduced into the organism are dependent upon individual conditions. For we know the extraordinary importance that the individual state and natural immunity may have, not only for the different and opposite resistance to the actions of poisons in different animals, but even in the same animal, as we see also in human pathology.

The resistance to the toxic power of blood in general varies in animals of the same kind, as is proven by a series of experiments I have made and which will be published in a short time. It is sufficient for me now to state that more than once I have seen a cavy die from an intraperitoneal injection of 5 cubic centimeters of a determined serum, while another cavy, as heavy as the former, resisted 10 cubic centimeters of the same serum.

That the poison circulating in the blood of epileptics is the epileptogenous agent that all authors admit as the proximate cause of the disease, is, I think, probable, and it is doubtless always present in the blood of an epileptic.

Another objection to our explanation of the crises of accommodation is this: If the said toxic principle does represent the epileptogenous agent commonly circulating in the organism of epileptics, how can we explain the fact that, by increasing it artificially through injections with very small doses of serum, severe perturbations arise in the stable equilibrium of the epileptic organism with phenomena of acute intoxication?

I cannot answer so complicated a question, but I think these acute phenomena are to be ascribed to the quantity of the toxic principles rather than to their quality.

The individual state of a normal person must correspond to some peculiar bio-chemical condition of the tissues and humors of the economy. Individual variations must also exist in the bio-chemical constitution of the tissues and the humors of individuals in a pathological state. I will incidentally recall that the phenomena of an acute intoxication were induced directly only by injecting into one epileptic the serum of another epileptic. We never observed symptoms of acute and direct intoxication from injecting into an epileptic the same blood-serum he had supplied a few days before.

This fact shows that the toxic principles circulating in a free state in the different epileptics and having a common property (the power of stimulating the epileptogenous nervous centers) may have remarkable variations in their constitution. It is evident that it is easier for the organism of an epileptic to accommodate itself to its own toxin, than to a toxin fabricated in the organism of another epileptic. Therefore, it is not surprising that the injections with serum made into the individual from whom it was obtained provoke no inconveniences.

The second co-efficient, that is, the bio-chemical variations in the constitution of the toxin circulating in the different epileptics, must be taken into account to ex-

plain the diversity in the crises of accommodation caused by the injections with the serum of one epileptic into another epileptic.

Even if we have now demonstrated that in the blood of epileptics there is a toxin having direct importance to the etiology of epilepsy, we have not yet explained the genesis and nature of the active principles of epileptic serum itself, in spite of the analogy existing between these active principles and the antitoxic substances of modern serotherapy.

We have already seen that the restoring therapeutic properties of epileptic serum are to be ascribed neither to immunizing toxic substances nor to antitoxic ones. The analogy between the antitoxins of microbic serum and the active principles of epileptic serum are really only apparent. The existence of a toxin in the blood of epileptics might lead one to think of a relation of cause and effect between such a toxin and the active therapeutic principles. We know, of course, that such antitoxic principles of a biologic nature exist in the organism of animals to which the action of a vaccinating microbic substance has given immunity.

But in order that I may better demonstrate that a substantial difference exists in the genesis and nature of the antitoxins of microbic serum and those of the therapeutic principles contained in epileptic serum, I will call attention to the different mechanism in the elaboration of these two active principles.

First, the active substances of the serum of epileptics are formed in an organism, which, in opposition to that in which the antitoxic substances of microbic serum are fabricated, has no immunity. In the second place a toxin of endogenous origin, such as circulates in the blood of an epileptic, does not possess the inoculating properties of bacterial toxin.

The first proposition is demonstrated by the clinical course of epilepsy. The second, which can hardly be separated in the mind from the first, was demonstrated by our experiments.

If we wish to find an analogy between antitoxins in general and the therapeutic principles of epileptic serum, we must assume that the epileptogenous agent elaborates an antitoxin in a biological sense, which does not have any vaccinating properties. This will remain merely an hypothesis until demonstrated by experimental pathology.

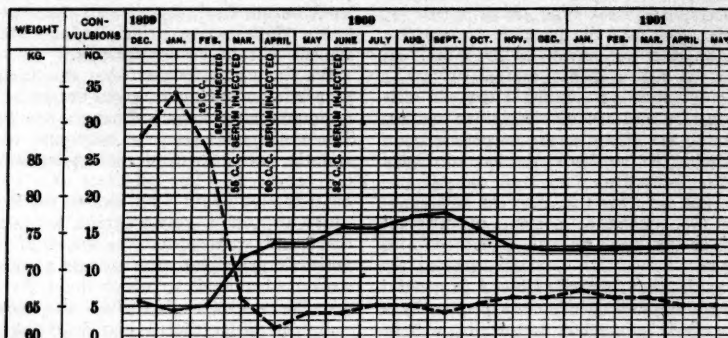
I will recall on this subject the discouraging results of the great researches by Bouchard. Bouchard, assuming that the peculiar secretions of a pathogenic microbe or organic cell are to be found in the urine and blood-serum of patients, tried to establish resistance through the one and the other to the bacterial (pneumonitis, erysipelas, etc.) and the non-bacterial (Addison's disease, etc.) diseases. It might be assumed that in epilepsy, also, it was a question of physiological principles existing in the tissues and humors of the economy, such as have, for the therapeutic action they exert, given rise to the transfusion of normal blood or serum, artificial serum, or the extracts of different organs (thymus, testicles, thyroid, etc.). But we have already seen that the blood-serum of normal individuals is almost always inactive in epileptics; therefore, we must exclude the idea of an active principle of mere physiologic origin. We have but to think of the transitory effect that may be determined by the physiological principles in general, as Gramatschikoff's studies have stated, to convince ourselves that the active principles existing in the blood-serum of epileptics must be of a different origin and nature. For the effects of the latter, especially the positive ones, exhibit a character of remarkable stability.

Any opinion as to the intimate nature of the active

principles existing in the blood-serum of epileptics would now be premature; therefore, I content myself with having stated certain facts and having tried to put them in evidence, with a detail that may serve to demonstrate their scientific and practical importance.

is different in different individuals. The phenomena it determines are transitory in character.

The other active principle circulates in the blood of epileptics, but only in a latent state. It is endowed with properties which have a stimulating power on the



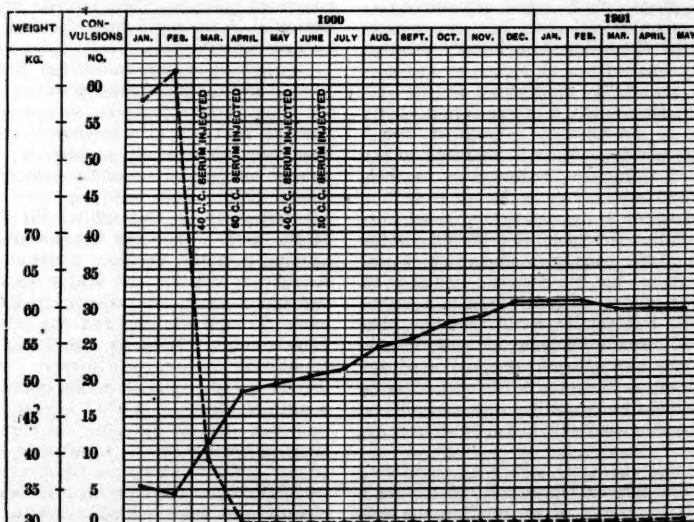
Case V.

I hope that others may soon confirm my results and extend the experiments to less severely afflicted epileptics than these in the asylum to which I was obliged to limit my researches.

We may then conclude by saying that the said researches demonstrate that in epileptic blood there are

metabolic cells which are concerned with the elaboration of the epileptogenous toxic agents.

These stimulating properties appear only as remote consequences that take place as a result of repeated injections over a considerable period of time with the blood-serum of an epileptic into himself or into another epileptic.



Case VI.

two active principles, which their different and opposite properties show to be of different nature and origin.

One of these principles circulates in a free state, and is only endowed with toxic properties when injected into the organism of another epileptic. The toxic effects may be immediate and direct and may follow even small doses. The activity of this toxic principle

These stimulating principles can deeply modify nutrition and epileptic manifestations. Upon both they exert a slow progressive action which may be restoring and therapeutic, or weakening and poisonous.

Their diverse and opposite modes of action depend upon some peculiar organic condition of the individual injected and are practically unexplained. The organic

condition of the patient in whom they are elaborated has no apparent influence on the different and opposite activities they may present.

In the cases in which stimulating principles have restoring therapeutic properties, there always result a remarkable increase in body-weight and an improvement or total disappearance of disturbances of organic functions or of social life. The disturbances of psychic functions and the epileptic manifestations of whatever nature get much better or disappear entirely. The stability of these positive results is in a direct relation with the degree of physiological reaction in the elements of nutrition.

ORIGINAL ARTICLES.

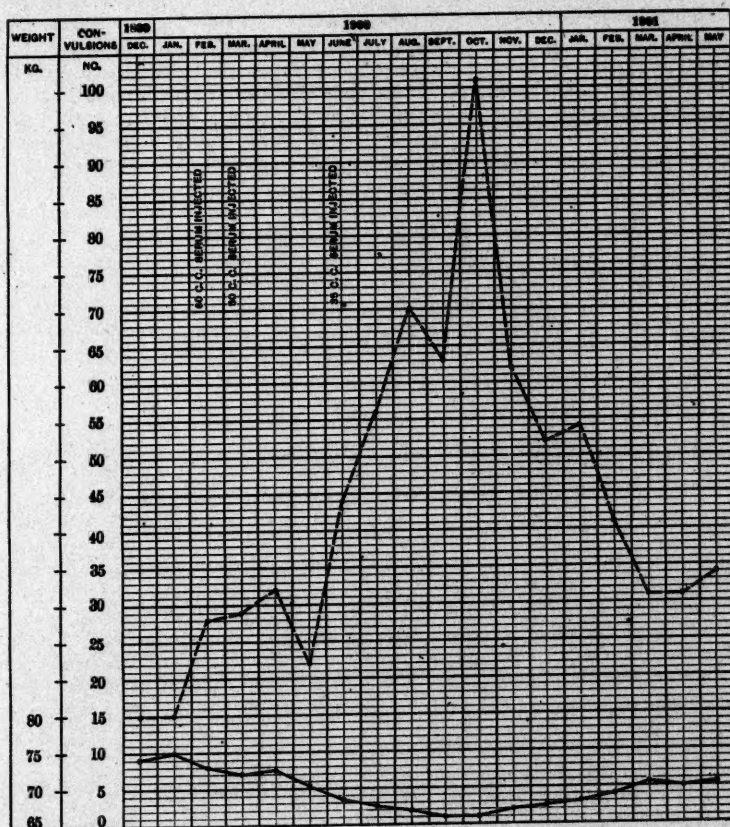
ACUTE INFLUENZAL NEPHRITIS IN CHILDHOOD.

BY B. K. RACHFORD, M.D.,

OF CINCINNATI, O.;

PROFESSOR OF PEDIATRICS IN THE MEDICAL COLLEGE OF OHIO.

EXPERIENCE leads me to believe that acute nephritis occurs not infrequently as a manifestation of influenza in children. Freeman¹ has reported a case of this kind and has collected and tabulated nine others.



Case VII.

In the cases in which the said principles do not act favorably on metabolism, the serum injections are useless. If continued in the same manner as in the preceding cases, there result a diminution in weight and a getting worse of every disturbance of the organic or social life. The psychic functions become more impaired and the epileptic manifestations increase in number and intensity, sometimes to a marked degree.

The accompanying tables are the graphic demonstrations of the changes in weight and in epileptic crises in Cases V, VI, and VII, as a result of the continued injections of serum.

In Case V. giddiness and convulsions are considered together as epileptic accidents.

In this paper I report four distinct cases of acute influenzal nephritis, which I have seen in the last few years. In addition to these cases I can distinctly recall two others not here reported, one of which was discovered on the fourth day of the influenza, and died of acute hemorrhagic nephritis two days later. The other was treated for a few weeks last winter, at the Good Samaritan Hospital, where I utilized the case in my clinical lectures. Under protest this patient was removed by his mother from the Hospital,

¹ Transactions of Amer. Ped. Soc., Vol. XII, 1900.

long before his convalescence was established. He was then treated for five or six weeks at my out-door clinic, under bad hygienic and dietary conditions, yet his recovery was complete.

Each of these cases occurred, not as a sequel but as a part of the influenza attack. The kidney symptoms in every instance occurred while other active influenza symptoms were still present.

The influenza poison attacked the kidneys and produced a most violent acute nephritis just as it, in other cases, attacks and produces inflammation of the lungs, the intestines, the meninges, and other parts of the body.

Acute influenzal nephritis as it occurred in these children comes on more quickly and violently than nephritis produced by scarlatina, diphtheria and the other acute infections. And my experience with these cases also teaches me that the worst symptoms occur as a rule within six or seven days after the kidney is attacked, and that, if complete suppression and profound uremia do not destroy the life of the child within the first week of the disease, a sure and steady improvement begins which leads to complete recovery. It is possible that in some of these cases, a chronic nephritis may be established, but I have never seen such a case. One of my cases previously referred to but not here reported, which, after the first severe symptoms had subsided, was treated in the out-patient department at my college clinic, certainly was given an opportunity to develop chronic nephritis by bad hygienic surroundings and improper food, and yet recovered. This case to my mind forcibly illustrates the strong tendency which there is to spontaneous recovery in these cases after the acute symptoms have been relieved.

These remarks apply only to influenzal nephritis as it occurs in infants and young children. In the adult the picture of this disease is a very different one, as is shown by Dr. G. Baumgarten in "Renal Affections Following Influenza."¹

In the adult acute hemorrhagic nephritis, occurring during the influenza attack, is nothing like as common as it is in the child. Chronic nephritis, however, resulting from repeated attacks of influenza is much more common in the adult than in the child. Personally, I have never observed a case of this kind under twelve years of age.

From my own experience, in the following cases, I have been led to consider acute influenzal nephritis in childhood not as a sequel or a complication, but as a part of the influenza attack. The kidneys are among the organs of the body which are not exempt from primary attack by the influenza poison.

Case I.—Girl, seven years of age, has had in the last four years two or three attacks each of influenza and catarrhal croup and follicular tonsillitis. In March, 1898, she had an attack of laryngeal diphtheria, during which she wore an

intubation tube for one week, and received 6,000 units of antitoxin. Her recovery was satisfactory and there was no evidence of nephritis at this time.

March 22, 1900, I was called to see this patient and learned that she had been ill with influenza for ten days. In the beginning of "the cold," the mother had kept her in bed for two days, but for the last week she had been going about the house and out of doors as she pleased. During this time she had had a bad cough and a "head cold," but not enough to alarm the mother, who had treated the case with home remedies. It was after dark when I reached the house. My patient was sleeping very soundly, but was awakened without much difficulty. She had a slight bronchitis, a catarrhal sore throat, and a temperature of 102° F. A puffiness about the eyelids led me to suspect nephritis and I accordingly prescribed calomel, a milk diet, and confinement to bed. I asked that a specimen of urine be sent to me next morning, as soon as it could be collected.

Two ounces of bloody urine were sent to my office about ten o'clock the next morning. This I learned later was all she had passed since the evening before. It contained blood and epithelial casts and was very heavy with albumin.

A trained nurse went on duty at five p.m., and I saw the patient a little later. Twenty-four hours had produced a marked change in my patient. The stupor was now marked, the face was swollen, and the stomach was so irritable that nothing had been retained during the day. Temperature 100° F. Calomel was continued and nourishment was discontinued.

March 23d, 8 a.m.: Symptoms unchanged; nothing has been retained on the stomach. No urine has been passed. The calomel was continued, a high rectal injection of a quart of sulphate of magnesia solution was given, and hot baths were ordered every four hours.

I saw the patient frequently during the day, and her condition remained unchanged. She slept constantly, except when vomiting, or when she was disturbed by a bath, or otherwise. No urine had been saved, and the nurse reported at 10 p.m. that none had been passed in the last twenty-four hours. It may be, however, that some urine escaped with the high enema of sulphate of magnesia solution which was repeated at 6 p.m. without effect. Magnesia sulphate was ordered by the mouth.

March 24th: Nurse has saved four ounces of bloody urine; the condition remains much the same, except that there was little less irritability of the stomach and the bowels had moved slightly. Sulphate of magnesia was continued, a teaspoonful every four hours, hot baths were continued, and high enemata of normal salt solution were ordered every four hours. No nourishment was attempted. At 8 p.m. the stomach was less irritable, quite a good deal of the magnesia had been retained, bowels had moved slightly, and about 3 ounces of urine had been collected by the

¹Transactions Assn. Amer. Phys., Vol. X.

nurse. Treatment was continued. Dr. F. Forchheimer saw the case with me during the afternoon.

March 25th, 8 a.m.: Patient's bowels moved slightly during the night, stupor not so marked, stomach less irritable; 6 ounces of urine saved; 8 p.m., patient very weak, but otherwise improved, bowels have moved freely, and there has been no vomiting during the day; 4 ounces of urine saved. Treatment continued, except that the magnesia was given every twelve hours, and a little buttermilk was allowed during the night.

March 26th: Patient more comfortable this morning, but very weak, pulse rapid, and temperature one degree below normal. From this time on the patient slowly convalesced, but required careful attention throughout the whole month of April. During all of this time she was kept in bed and upon an exclusive diet of milk. The urine gradually cleared, but still contained albumin and casts until the middle of May. A trace of albumin was found in the urine on the 18th of May. This was the last. Her recovery, although slow, was complete and by the middle of June she had recovered her health and strength and has remained well up to the present time.

Case II.—Albert A., twelve years of age; all the members of his family including himself had influenza. I stopped at the house on March 1, 1897, to see his brother and sister. He, while he had "a cold in his head," was not considered ill enough to require the services of a doctor. I did not visit the family for a week after this date and during this time my patient had fever, cough and other influenza symptoms. About the 6th of March, however, he was thought well enough to visit a friend in another part of the city. He remained there during the day; his father came for him in the afternoon, and found him very nervous and suffering from a frightful headache. He ordered a carriage to take the boy home and drove past my office in doing so. The boy walked into the office with his father, and as I was not there they decided to wait for my return. One-half hour later, about 5 p.m., he had a very severe general convulsion, and a number of physicians in the neighborhood were called to see him. On my return at 6 p.m. I found him lying on a lounge in a heavy stupor, from which he could be aroused with difficulty. I assisted the father in carrying the boy into the carriage and he was taken home. On our arrival there I obtained some urine by catheterization and found it heavy with albumin, and containing many granular and epithelial casts. This made the diagnosis of influenzal nephritis plain. He was ordered sulphate of magnesia, a teaspoonful every two hours, and a hot bath every three hours. During the night he had another violent convulsion. The next morning the stupor was a little less marked and the swelling of the face which had existed the night before was also very pronounced. The magnesium had been retained and his bowels had moved freely. During the next few days, the hot baths and magnesium sulphate were con-

tinued and a small amount of milk was given. From this time his convalescence was rapid; at the end of three weeks the albuminuria had entirely disappeared, and the patient was convalescent.

Case III.—Girl, seven years of age, was admitted to the Children's Ward of the Cincinnati Hospital December 2, 1900, with influenza, which she had had for one week. At the time of her admission the tonsils were swollen and red and the cervical lymphatics were enlarged and tender. Temperature 102° F. There was no history of any other acute infectious disease. Physical examination showed slight bronchitis with some swelling about both ankles. A specimen of urine obtained by catheterization contained about 4 per cent. by volume of albumin; epithelial casts were present; specific gravity, 1024.

Treatment consisted in rest in bed, milk diet, calomel, and hot baths every six hours.

December 3d: Patient retained very little milk, vomiting occurred a number of times. No urine was passed voluntarily after the catheterization twenty hours ago. Eight and a half ounces of urine were obtained by catheterization. Sulphate of magnesium, a teaspoonful every four hours, was added to the treatment.

December 4th: Stomach less irritable, bowels moved freely, some urine has been passed voluntarily. Sulphate of magnesium given once a day; baths every eight hours.

December 5th: Patient improved, milk is retained, edema less, bowels moved freely, urine passed voluntarily, albumin less.

December 15th: Patient has improved steadily, there is no albumin in the urine to-day.

January 3d: Patient discharged well.

Case IV.—Boy, four years of age. He and three other brothers and sisters had had influenza for a week, and during this time he had a mild bronchitis, a catarrhal sore throat, and a nasal catarrh, with a temperature ranging between 101° and 104° F. After one week's illness, on February 1st, he was seized with a convulsion and brought to the Cincinnati Hospital, where I saw him for the first time. The convulsions continued for more than two hours, and during this time the convulsive movements were partially controlled by inhalations of chloroform; hot baths and chloral by the rectum were also given. The convulsions, however, continued, and after a few hours it was decided to dispense with the chloroform and give a twelfth of a grain of morphine hypodermically. The morphine controlled the convulsion, but the child remained profoundly unconscious. On his admission to the hospital a small quantity of urine was drawn from the bladder, this urine was tinged with blood, and the filtered urine contained a very large percentage of albumin. Epithelial and blood casts were abundant. The examination of the urine led to the diagnosis of acute nephritis, and the treatment above detailed was accordingly pursued.

Following the hypodermic injection of morphine, salt solution was given by the rectum and

also subcutaneously, and the hot baths were continued at frequent intervals. But these means failed to establish the kidney secretion; the patient remained profoundly unconscious and died the next day. In this case the hypodermic injection of morphine should have been followed by bleeding and the intravenous injection of salt solution.

A NEW METHOD OF LOCATING FOREIGN BODIES BY MEANS OF THE X-RAY.

BY LEWIS GREGORY COLE, M.D.,
OF NEW YORK.

VARIOUS methods of locating foreign bodies have been described; some simple ones without the use of expensive apparatus; others more complicated and requiring such apparatus. Of the simpler methods the one most in vogue is that of taking two skiagraphs at right angles to each other. This is applicable only when the foreign body is in an extremity and even then, unless the technic be perfect, there is a chance for error. (1) The skiagraphs should be taken at right angles to each other. (2) The tube should be at the same distance from the plate during each exposure. (3) The rays which cause the shadow of the foreign body should strike the plate at right angles. (4) The anode should be directly over the approximate location of the foreign body as ascertained by a fluoroscopic examination.

After having taken two skiagraphs, one to locate the foreign body anteroposteriorly, the other to locate it laterally, estimate the third dimension by its relation to some bony prominence. Measure the distance on the skiagraph from the foreign body to some bony prominence and then measure the same distance on the extremity from that bony prominence in the direction of the foreign body and mark the point with silver nitrate.

This seems accurate, but how often the needle, bullet or whatever it may be, appears to have moved since the skiagraph was taken! I think the following diagram will explain the error in this method.

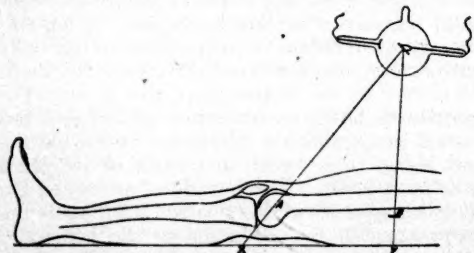


Fig. 1. X, shadow cast by adductor tubercle; Y, shadow cast by foreign body; A, adductor tubercle; B, foreign body.

If the tube be over the foreign body, located about the middle third of the thigh, a ray of light falling perpendicularly casts a shadow of that foreign body under it. Selecting the adductor tubercle on the inner tuberosity as the nearest bony

prominence, a ray of light passed through it does not fall perpendicularly on the plate, but at an angle corresponding with the distance of the tube from the plate, and the distance of the foreign body from the adductor tubercle and the distance of that bony prominence from the plate, which in an adult is about three inches. Therefore the shadow cast by it on the plate is further from the shadow cast by the foreign body than the latter is from the bony prominence.

Now if we measure the distance in the skiagraph between the foreign body and the adductor tubercle, and then measure the same distance up the thigh from that bony prominence and mark it with silver nitrate, we shall find that that mark is as much above the foreign body as the shadow cast by the adductor tubercle on the plate was below that bony prominence.

Another simple method consists in taking two skiagraphs on separate plates at different angles; then measuring the distance from the edge of each plate to the shadow cast on it by the foreign body and subtracting the one from the other.

There is much difficulty in substituting the second plate for the first one. The movement of the patient and the movement of the plate in the envelope lead to an error that is hard to overcome. Even if the technic were perfect, there would be nothing to guide the operator as to where to make an incision, as the shadows cast by the bones are so distorted in each of the skiagraphs, owing to the angle at which the rays of light fall on the plate, that it would be very misleading, as shown by the diagram of a foreign body in the thigh.

Another method, that of taking two skiagraphs on one plate by interposing a metal plate so as to cover one-half of the plate while exposing the other half, has been described. The interposing of metal so as to protect one-half of the plate without interfering with the shadow cast by the foreign body on the other half is extremely difficult, especially when the foreign body is near the posterior surface of the body, and its shadows are cast near together; it is absolutely unnecessary, though if one does succeed in getting both shadows on one plate in this method, one has the foundation for locating the exact distance of the foreign body from the surface; but no way of locating it as regards its relation with any bony prominences because of the error described in locating the foreign body in the thigh or with any known point on the surface of the body.

I would like to present the following method, which does not require expensive apparatus, which is applicable to any part of the body—especially the thorax and abdomen, and which is, I think, absolutely accurate both as regards the location of the foreign body and its distance from the surface, and which gives the operator a definite problem, viz., The foreign body is between two known points on the surface of the body; how far is it from either of these two points?

To ascertain the first, remove the patient's clothing and place him horizontally on a table through which a fluoroscopic examination may be made.

Place the tube over the region of the foreign body and make fluoroscopic examination. This may or may not result in its approximate location. If it does, leave the tube placed directly over it. If not, a skiagraph may be taken to ascertain this, and then place the tube over the approximate location as ascertained by skiagraph.

If the fluoroscopic examination reveal the foreign body, place two coins (dimes), one on the anterior, the other on the posterior aspect of the body, so that a ray of light passing vertically from the anode would pass through both coins and the foreign body—thereby all casting one shadow on the fluoroscope or plate. Remove the coins and mark their position with silver nitrate.

If the foreign body cannot be detected by a fluoroscopic examination and the coins are so arranged as to cast one shadow, the method is a little more difficult, but none the less accurate. Instead of arranging the coins during a fluoroscopic examination, we must do so by taking a skiagraph. Arrange the coins as before, so that they both cast the same shadow as near as possible to the approximate location of the foreign body as ascertained by the first skiagraph; then take a second skiagraph and learn the relation of the foreign body to the coins.

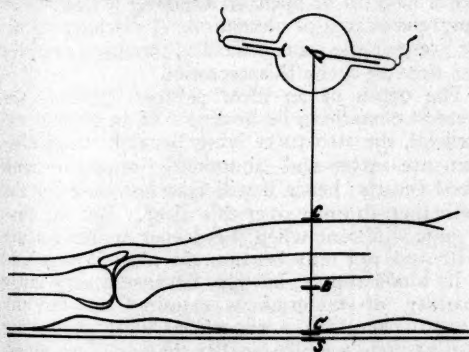


Fig. 2. C and C', coins; S, shadow cast by coins and foreign body; B, foreign body.

If the foreign body be between the coins, it will cast its shadow with theirs; if it be *near* an imaginary line passing between the coins, it will cast its shadow *near* theirs. Measure the distance between the shadows cast by the coins and that cast by the foreign body, move the coins this distance in the direction of the foreign body. If it be less than an inch, remove the coins and mark their position with silver nitrate; if more than an inch, it is safer to take another skiagraph and ascertain whether the foreign body is between the coins. We now know, either from the fluoroscopic examination or the skiagraph, that the foreign body is between two known points marked with silver nitrate.

To ascertain how far the foreign body is from the surface, place the plate in apposition to the body at the posterior mark, then place the anode directly above the anterior mark. If one has been able to detect the foreign body and arrange the

coins during a fluoroscopic examination, the tube will already be there; if not, drop a plumb line from the anode to the anterior silver nitrate mark. Note the distance of the anode from the plate.

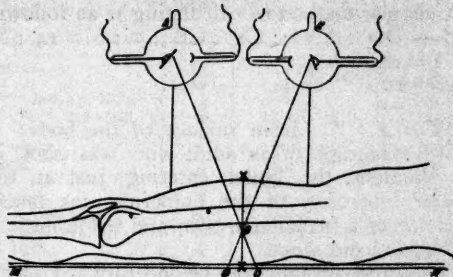


Fig. 3. A, tube in first exposure; A', tube in second exposure; O, shadow cast by bullet during first exposure; D, shadow cast by bullet during second exposure; B, foreign body; M, N, plate.

On this plate make two exposures, moving the tube for the first exposure a short distance from its present position. For the second exposure move it exactly the same distance from its original position but in the opposite direction. Note this distance. This may be done by marking on the surface of the body two points equally distant from the original silver nitrate mark and in directly opposite directions, using a plumb line to place the anode over these marks, as per diagram.

Now one has two shadows of the foreign body on one plate; develop the plate regardless of everything except these two shadows. Using the distance between them, one can ascertain by the following diagram and formula the distance of the foreign body from the surface:

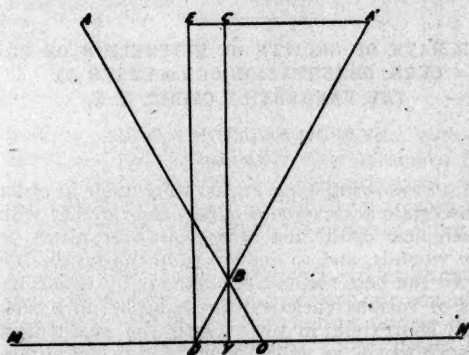


Fig. 4. Diagram.

Let MN be the plate; B, the bullet; A, the position of tube during first exposure; A', position of tube during second exposure; O, shadow of bullet first exposure; D, shadow of bullet second exposure; CY, a line passing perpendicularly through bullet.

If the distance CY is 14 inches, if the distance AA' is 6 inches, if the distance DO is 1 inch, in order to find the distance BY, draw line ED parallel to CY; then in the similar triangles, A'ED

and $A'CB, A'E : A'C :: ED : CB$; or, substituting measurements, $3\frac{1}{2} : 3 :: 14 : X, X=12$. If $CB=12$, then $BY=2$ inches. Therefore the foreign body is two inches from the surface of the body.

A simpler method of calculating is as follows:
 $AA' + DO : AA' :: CY : CB; 7 : 6 :: 14 : X$.
 $CY=14$ inches.
 $CB=12$ "

$BY=2$ " from surface of the body.

The skiagraph of an adult who was shot in the shoulder, the bullet entering just at the greater tuberosity of the humerus, was taken. There were a hematoma, pain and tenderness of the subcoracoid space.

I took a skiagraph from behind forward which showed the bullet about $1\frac{1}{4}$ " from the head of the humerus toward the median line.

A resection of the shoulder was decided on and it showed that the bullet had passed obliquely backward and inward; an incision into the subcoracoid space showed the hematoma to be from injury to the head of the humerus, and that the bullet was posterior to the chest.

I then took another skiagraph making two exposures on the same plate, with the tube in the second exposure six inches from its position during the first, and placing the angle of the safety pin at the position of the posterior silver nitrate mark. The tube being 13 inches from the plate, working it out from the above formula, I found the bullet to be 3.1 inches from the posterior silver nitrate mark. As the man was very thick through the shoulders and chest, that would bring it between the scapula and chest-wall instead of in the subcoracoid space, as the first skiagraph would lead one to think.

THE RATE OF GROWTH OF EPITHELIUM OF ULCERS; OBSERVATION OF 100 CASES AT THE VANDERBILT CLINIC, N. Y.

BY SIGMUND DEUTSCH, M.D.,
OF NEW YORK.

THE following experiments were made in order to ascertain with some accuracy the rapidity with which new epithelium will grow over ulcers or raw wounds, and to deduce from the results obtained the best method or methods by which ulcers of various varieties can be healed in a relatively short time; in other words, the employment of such means as will produce a sufficient stimulation to the epithelium surrounding the ulcer and to the ulcer itself.

In order to obtain satisfactory results, it was necessary to watch the ulcers, each individually, measure their extent, record the treatment and the results thereof, and observe whether they yielded to treatment. To this end, the ulcers under observation were measured every week and by this means one could readily see if any progress was made.

There are also other factors which to a certain extent influence the results obtained and must

necessarily be taken in consideration. The cause of an ulcer; its situation; the condition in which the ulcer is found, whether it presents a healthy, and clean or a sloughy or gangrenous surface or a foul discharge; whether superficial or deep; and, lastly, the age of the patient. The season of the year plays perhaps some rôle, since hot weather is detrimental to varicose and eczematous ulcers, but has little influence upon the other varieties.

With regard to the cause, I have found it very convenient to divide ulcers into three classes: (1) Those belonging to the varicose and eczematous variety; (2) those due to constitutional or local syphilis; and (3) ulcers due to trauma, including burns, infected wounds and ulcers due to vaccination.

The situation of an ulcer is very important, not as a matter of diagnosis, but as a matter of fact. Ulcers situated at the malleoli, heel or arch of the foot are the most sluggish and most difficult to treat; while an ulcer situated on the arm will heal more quickly than one on the leg.

The condition in which an ulcer is found will alter the treatment and consequently the results obtained, for it makes a great deal of difference whether an ulcer is clean to start with, or whether weeks have to be spent in cleaning a sloughy or gangrenous area of ulceration. A discharging ulcer presents the same difficulty, though it requires less time to check this secretion.

The depth of an ulcer presents perhaps the greatest obstacle to its healing. If an ulcer is superficial, the structures lying beneath the epithelium are intact and abundantly supplied with blood-vessels; hence it will take less time for the epithelium to grow over this ulcer. But the case is quite different when the deeper structures are destroyed, not only because the ulcer is deprived of its blood-supply, but also because a very large quantity of material is required to fill the cavity. Therefore, a superficial ulcer measuring 25×35 mm. is really smaller than an ulcer measuring 10×10 mm. and perhaps 2 or 3 mm. deep.

The age of the patient must also be taken into account. In the old the blood-supply is less and the resisting powers are weak; and if in addition the state of nutrition is bad, one can readily see that an important stimulus essential to the healing of any wound is wanting.

Hot weather is certainly an impediment to the growth of the epithelium of a varicose ulcer, since it increases itching and the patient will surely scratch the affected part, thereby producing a great deal of irritation. The secretion is also increased and being easily decomposed is another source of irritation. Be it as it may, this much is certain—during the hot spell in July of last year I observed that nearly all the ulcers of the varicose and eczematous variety either became larger in extent or remained stationary for two or three weeks.

The treatment was manifold. Each case was treated on its own merit. Some ulcers responded readily to one remedial agent, while in others of the same variety no results whatsoever were ob-

VARICOSE ULCERS.

Case.	Duration.	Condition at Beginning of Treatment.	Location.	Treatment.	No. of Weeks Until Healed.	MEASUREMENTS IN MILLIMETERS.		Average Growth Per Week.
						At Beginning	At End.	
61	8 years.	Deep, clean.	Leg.	Balsam.	10	115 x 94	24 x 7	9 mm.
61	8 "	" " "	Int. malleol.	" "	10	34 x 26	12 x 5	2.1 "
65	4 "	Superf., clean.	Leg.	" and Ag. NO ₃ .	5	60 x 45	0	10.5 "
37	1 month.	" " "	" "	" " red wash.	3	95 x 11	0	3.4 "
56	2½ years.	Deep, " "	Int. malleol.	" " "	7	14 x 15	0	2. "
48	2 "	Superf., " "	Leg.	Red wash.	4	25 x 15	0	5. "
65	1 "	Deep, " "	" "	Balsam.	4	13 x 11	0	3. "
43	8 months.	Superf., " "	" "	" "	5	10 x 16	0	2.6 "
37	3 years.	Deep, " "	Ext. malleol.	Red wash.	3	5 x 8	0	2.1 "
68	5 "	" " "	Ankle.	Balsam, red wash.	12	34 x 25	13 x 10	1.5 "
60	7 "	" sloughy.	Ext. malleol.	Red wash, creolin.	8	34 x 19	0	3.3 "
52	18 months.	Superf., " "	Leg.	Red wash.	5	15 x 13	0	2.8 "
66	4 years.	" " "	" "	Balsam, red wash.	10	31 x 14	0	2.25 "
46	2½ months.	" clean.	" "	Red wash.	5	21 x 18	0	3.9 "
30	7 "	Deep, sloughy.	Sole.	Red wash, balsam.	2	8 x 6	0	3.5 "
32	2 years.	" " "	Leg.	" creolin.	10	110 x 40	0	7. "
60	14 months.	" clean.	" "	Red wash, Ag. NO ₃ .	11	18 x 11	3 x 4	1. "
40	4 "	" " "	" "	" " "	2	5 x 11	0	4. "
37	3 years.	" sloughy.	Int. malleol.	" " "	9	9 x 10	0	1. "
37	2 weeks.	Superf., clean.	Leg.	Balsam.	4	15 x 10	0	3. "
38	2 years.	Deep, sloughy.	" "	Lycopod., creolin.	9	30 x 18	15 x 10	1.2 "

SYPHILITIC ULCERS.

32	2 months.	Superf., clean.	Leg.	Alum acetate.	4	15 x 15	0	3.75 mm.
22	1 "	Deep, sloughy.	Sole.	Red wash, creolin.	4	29 x 20	27 x 22	0 "
16	2 weeks.	Superf., clean.	Leg.	Alum acetate.	4	35 x 32	0	8.3 "
48	4 years.	Deep, sloughy.	Knee.	" " "	10	60 x 45	0	5.25 "
42	2 "	" " "	Leg.	" " "	4	17 x 13	0	4. "
26	1 week.	" " "	Chest.	" " "	5	45 x 30	0	7.5 "
7	3 "	Superf., clean.	Leg.	" " "	2	10 x 10	0	5. "
28	3 months.	Deep, sloughy.	Knee.	" " "	8	78 x 52	0	8.1 "

TRAUMATIC ULCERS.

21	8 months.	Deep, sloughy.	Arm.	Balsam, creolin.	4	17 x 30	0	6. mm.
38	?	" clean.	Elbow.	" " "	3	30 x 14	0	7.3 "
30	4 weeks.	" sloughy.	Finger.	" red wash.	4	16 x 12	0	3.5 "
23	3 months.	Superf., clean.	Ant. surf. leg.	" " "	6	17 x 11	0	2.33 "
41	1 week.	" " "	Arm.	Boric acid ointment.	2	13 x 20	0	8. "
39	1 "	Deep, sloughy.	Leg.	Balsam, red wash.	5	29 x 14	0	4.3 "
38	18 months.	" clean.	" "	Red wash, creolin.	3	65 x 25	0	5.5 "
18	2 weeks.	Superf., clean.	" "	Alum acet., Ag. NO ₃ .	6	25 x 21	0	3.8 "
36	1 "	" " "	" "	" boric acid oint.	7	25 x 50	0	5.3 "

tained. The varicose and eczematous ulcers constituted the majority of all the cases under observation (sixty-seven); therefore, I will speak of them first. The remedial agents in order of their importance were as follows: Balsam of Peru, red wash, creolin, silver nitrate, ichthyol ointment, lycopodium.

Balsam of Peru.—This is perhaps a stimulant most frequently used, though not always advantageously; for it must be remembered that it is often more irritating than stimulating. Therefore, it often happens that after a single application the ulcer is found in a worse condition than it was before, to say nothing of the pain caused the patient. Hence, whenever an ulcer is surrounded by an area of inflammation, as is often the case, and when this area is tender and painful to the touch, balsam of Peru should be abandoned and one of the milder stimulants employed. Some ulcers will remain indifferent to the application of balsam. They do not tend to become worse, neither do they show any improvement. How-

ever, a great many cases were treated with this agent, and it is beyond doubt that balsam of Peru is a valuable stimulant in appropriate cases. The measurement showed that the ulcers treated with it decreased on an average from two or three and one-half mm. per week.

Red Wash.—This is a much milder stimulant than balsam of Peru, and possesses one advantage over it, in that it is not irritating, and is therefore particularly adapted to those ulcers surrounded by an area of inflammation. But if an ulcer is found to be indolent and of long standing, other means must be resorted to. It is especially beneficial for traumatic ulcers and raw wounds, and can be used when there is any objection to iodoform.

Creolin.—This is perhaps the most efficient drug for gangrenous or sloughy ulcers. It is somewhat irritating and causes itching, but its advantages outweigh its disadvantages. As long as an ulcer presents an area of gangrenous matter with a most offensive odor, a stimulant

would be out of place and nothing would be accomplished by it. The first step is to remove all the slough; creolin accomplishes this most admirably, and at the same time time disinfects the wound. A solution of $\frac{1}{2}$ per cent. strength should be used, 1 per cent. in more advanced cases. The ulcer being cleaned, one can proceed to apply stimulants.

Silver Nitrate.—The silver nitrate stick was employed with the intention of stimulating the edges of the ulcer and thereby causing a growth of new epithelium. In some cases the end sought was obtained, but in a greater number of cases the effort was futile, even when the ulcer itself was touched with the stick. This procedure, being somewhat painful, should be abandoned as soon as it becomes evident that the ulcer fails to decrease in size.

Ichthyol Ointment.—This may be compared to balsam of Peru, being both stimulating and irritating. Though it may benefit some ulcers, it produces a most intense itching, not observed when applied to sound skin. It does not present any advantages over the other stimulants. Its main use was application in a combination with zinc oxide or boric-acid ointment to the inflamed or tender skin surrounding the ulcer.

Lycopodium.—If an ulcer is accompanied by a wet eczema, or if the ulcer itself discharges a foul secretion, a stimulant would not only be out of place, but might tend to produce a true dermatitis with exacerbations over the ulcer itself. An ointment would tend to block the secretion while not diminishing it. Hence, a bland drying-powder is indicated. Lycopodium or any other non-irritating drying-powder can be used. It will certainly not heal the ulcer and that is not to be expected, but it may dry up the wet eczema. I found in lycopodium a valuable agent for this purpose. Boric-acid powder produces itching and is consequently irritating.

Syphilitic Ulcers.—The second class of ulcers are either due to constitutional or local syphilis. They are not so persistent as those of the preceding variety and are not so painful. The statement that syphilitic ulcers will heal by themselves if internal treatment is administered is not quite correct. Without local treatment a syphilitic ulcer will, in the majority of cases, tend to spread and to destroy the deeper structures. One may apply either the blue ointment or the red wash and creolin. The application of a saturated solution of alum acetate will give excellent results and should be made often, especially if a discharge is present. A few applications of this solution removed discharge and slough, leaving a clean and healthy wound, and the complete closure of the ulcer will then be a matter of two or three weeks.

Traumatic Ulcers.—Under this heading all those ulcers are included which are caused by some injury, be it a kick or a blow, fall, burns, wounds healing by second intention, and vaccination ulcers. The most frequent site of the traumatic ulcers under observation was the anterior

surface of the leg; next in frequency was the elbow; and a few occurred at some other part of the body.

A traumatic ulcer on the anterior surface of the leg, particularly if caused by a kick or a fall, will heal very slowly; stimulation is of no avail save in exceptional cases. The healing qualities of alum acetate as observed in syphilitic ulcers are almost wholly absent here. (This fact is, perhaps, of some importance for the diagnosis of ulcers the cause of which is uncertain. If such a traumatic ulcer responds readily to the treatment of alum acetate it is very probable that this ulcer is of syphilitic origin.)

As a matter of choice one may apply either the boric-acid ointment or ichthyol ointment; or if stimulation is desired, red wash, creolin or balsam of Peru. Sometimes the application of the silver nitrate stick will eventually hasten the closure of the wound. If a traumatic ulcer is suppurating, the application of ointments should be abandoned and a wet dressing applied. With regard to vaccination ulcers, the application of a wet dressing or boric-acid ointment will answer best.

Summary.—The observation of these cases has shown that (1) the rate of the growth of epithelium is in direct proportion to the size of the ulcer; (2) in the majority of cases the average growth of epithelium is from two to three and one-half mm. per week; the range is 1.4 to 10.5 mm. (traumatic ulcers not included); (3) the time required to heal an ulcer is in no proportion to the duration of the ulcer; an ulcer of four months' standing does not heal quicker than one of four years' standing, other conditions being equal; (4) the rate of growth of epithelium in traumatic ulcers is extremely irregular; it is in no relation to the size or duration of the ulcer; the average growth per week is about five mm.; the range is from 1.4 to 8 mm.

I wish to express my most sincere thanks to Dr. E. M. Foote, chief of the surgical clinic, for supplying me with the necessary cases, and to the clinical staff for their kind assistance.

MEDICAL PROGRESS.

OBSTETRICS AND GYNECOLOGY.

Treatment of Inversion of Uterus.—The treatment of early cases is sufficiently well understood. The treatment of chronic cases, in which the cervix has contracted and involution is completed and in which adhesions have formed within the funnel of the inverted uterus, is not so easy to determine. Constant elastic pressure may be successful if used early and faithfully; but there remain inveterate cases which demand surgical relief. Three procedures are applicable: (1) The method of Thomas, in which the abdomen is opened, the funnel dilated and the uterus replaced; (2) the method of Kuestner, which reaches the funnel through an opening from the vagina into the cul-de-sac of Douglas; (3) vaginal amputations of the uterus. The weight of surgical authority, according to E. W. CUSHING (Boston Med. & Surg. Jour., Feb. 13, 1902) seems to be against the operation of Thomas. Although previously content with vaginal hysterectomy in these cases, Cushing decided after reconsidering to

adopt Thomas' method in a case which came to him for treatment, for the following reasons: The method had never been tried since the introduction of the Trendelenburg position, which posture will presumably be of as much advantage in treating inversion abdominally as in performing hysterectomy. Adhesions can be separated more carefully from above. The ligaments which support the uterus will be found elongated and weakened, and ventrofixation will avert recurrence of the inversion. Less blood will be lost if all manipulation be done from above. The whole operation will be cleaner. On these *a priori* grounds, Cushing treated his case by the method of Thomas, and his experience was in entire conformity with his anticipations. The position of Trendelenburg being used, Thomas' operation becomes the operation of election, being easier, safer, cleaner and more surgical and satisfactory than any other.

Vesicovaginal Fistula.—A new method of operating in this condition, with the report of a case, is described by A. L. SMITH (Phil. Med. Jour., Feb. 15, 1902). The patient presented a tear of the bladder, vagina, and cervix, about two inches long, extending from back of the spinster vesicæ down through the os. The steps in the operation are briefly as follows: After incision of the vagina in front of the cervix, the bladder was pushed back from the uterus, the laceration of the cervix being repaired by Emmet's trachelorrhaphy. The fistula was then cut at the junction of the bladder and vagina. The tear in the bladder was sewed up with catgut (chromicized), the muscular wall only being included, this forming a strong ridge. The vaginal slit was closed with interrupted sutures of silk-wormgut, passing through the vagina, then through the muscular wall of the bladder about half an inch to one side of the tear and out on the other side of the vagina, thus displacing the bladder to one side so that the two suture lines did not come together. The advantages claimed are as follows: (1) No stitches are left in the mucous membrane as foci for calculi; (2) instead of a narrow edge for union in the bladder, a thick ridge is secured, and (3) the lines of suture in the bladder and in the vagina are not approximated, a stronger result thus being obtained.

Abdominal and Vaginal Celiotomy.—No unchangeable laws governing the choice between these two methods of operating can possibly be laid down, but the general principles are expressed as follows by H. MACNAUGHTON-JONES (Med. Press & Cir., Jan. 22, 1902). In the abdominal method there is a better field of view, greater command over the affected organs, fuller power of exact dealing with the ovaries and tubes in carrying out conservative measures and in breaking up extensive adhesions. Knowledge of the size of cysts, sacs or solid growths greatly facilitates their treatment. There are, however, cases in which the vaginal route is the operation of selection. In simple parovarian cysts and small cystic tumors of the ovaries, in cases of cystic disease of the adnexa, complicating small interstitial myomata and subperitoneal myomata in the cul-de-sac of Douglas, in adnexal trouble, complicating retrodeviation of the uterus—in short, in cases which are more or less recent, with movability and non-adhesion of the mass, with the uterus itself mobile—by Martin's operation of anterior colpotomy the uterus can readily be turned into the vagina and the adnexa removed if necessary. Should difficulty arise, the advantage of removing the mass in pieces by claw, forceps and scissors, by Doyen's drill, by slicing the uterus into fragments (Landau's method) can be resorted to. As a rule, however, the frequency of cancer and tuberculosis in this region makes it advisable not to follow this method oftener than is necessary. When in doubt

the abdominal route is much the better. Conservatism in operating on the adnexa is always very important and is really the source of modern success.

Heart Disease in Pregnancy.—The mortality among women with cardiac disease who have become pregnant varies from 20 to 55 per cent. The condition, therefore, is one of the most grave and fatal of all those which confront the obstetrician. PROF. WENSTER (Medicine, Feb., 1902) has considered it in all of its phases, but with especial reference to the therapeutic indications. There are a number of factors, each of which must be individually appreciated, which serve to invalidate the heart in pregnancy. The enormous increase in the vascular area and in the total quantity of blood imposes an additional mechanical strain on that organ. The deterioration in the blood, anemia, etc., lead to malnutrition of its musculature and to a certain degree of paresis. The distention of the abdomen limits the oxygenating power of the lungs, impedes their auxiliary action in circulation, and blocks the pulmonary circulation. All cardiac cases, therefore, suffer to a greater or less degree during pregnancy. If hypertrophy of the heart be sufficient, the disturbances are slight, manifesting themselves only as palpitation, cough, dyspnea, and slight edema. In the cases which fail to compensate properly, the most serious symptoms may supervene. The woman may then succumb to heart disease during pregnancy, or abortion may occur. If the case goes on to labor, this may also prove fatal to the woman. The treatment of all cases of heart disease should be prophylactic in the early stages. If abortion threaten, or if signs of beginning cardiac insufficiency appear, but, especially, if these two conditions occur together, the physician should always be ready to end the pregnancy in the interest of the mother. The labor, whether premature or at full term, demands the most careful management. If the patient stand it well, she may be permitted to go through the first stage without interference. If signs of heart failure appear, she is to be chloroformed, and the cervix dilated with Barnes' bags or manually. The second stage presents similar indications. The woman is to be assisted, if necessary, by the forceps. The best stimulant during this stage is nitrite of amyl, or nitroglycerin, which neutralizes the increasing strain on the heart, due to the additional blood thrown out of the retracting uterus, by diverting it into the dilated abdominal vessels. The third stage is that most to be feared. Strangely enough, there is one set of observers which attribute the danger to anemia of the heart, while others hold that the patient dies from overdistention. The author belongs to the latter group: "The whole vascular area of the body has been greatly reduced by the contraction of the uterus; the extra strain on the right side of the heart may be too much for it;" overdistention and paralysis supervene. The indication is plain. The third stage is to be prolonged, at the cost of considerable loss of blood, in order to give the cardiovascular mechanism a chance to adapt itself to the altered conditions. The placenta is gradually separated by the fingers, and uterine contraction should be stimulated only if the loss of blood becomes extreme. During the puerperium, the treatment is limited to careful nursing, and symptomatic treatment.

Extra-uterine Pregnancy.—When a diagnosis of this condition is made soon after the rupture and before the patient has lost much blood, an operation should always be performed, but, unfortunately, the diagnosis is usually not certain till the patient has become so exsanguinated that any interference would probably result in death. J. W. ELLIOT (Med. Rec., Feb. 22, 1902) has operated successfully upon twenty such cases and is convinced that there is very little danger in waiting

a day or two for the patient to recover her strength, for he says it is very rare for them to bleed to death at the time of rupture. They almost always subsequently regain sufficient strength to warrant an operation and usually stand it very well. He believes, however, that if they are not operated upon, the chances of another hemorrhage are very great; it is almost certain to occur. In operating he finds the uterus as soon as possible and, after ligating both ends of the offending tube, rapidly removes it, leaving the blood clots in the abdomen to be absorbed. Any unnecessary delay or manipulation is hazardous.

Spontaneous Rupture of the Uterus.—Rupture of the uterus during pregnancy or parturition is, happily, a comparatively rare occurrence. The signs of threatened rupture are usually so clear that R. M. MURRAY (Jour. of Obst. & Gyn., Brit. Empire, Feb., 1902) thinks that its occurrence is a reproach to the obstetrician in whose hands the case is. The rupture is either traumatic or spontaneous. Under traumatic causes must be included all cases brought about by mechanical violence, such as the forcible introduction of the hand into the uterus, the unskilful performance of version, and the improper use of forceps, etc. These may be classified as internal traumatism. External traumatism is a term to be applied to those cases of rupture due to blows on the abdomen and to falls. Spontaneous rupture has for its immediately determining cause the contraction of the uterus. The great majority of these cases are, however, associated with some condition arising from an abnormality of either of the two factors of labor—the “passage or the passenger.” Examples of the first are found in cases of rigid os and contracted pelvis; of the latter, hydrocephalus or malpresentation. Thanks in the main to the classic work of Bandl, the mechanism by which the process occurs is known to all. With an obstruction to the dilatation of the os, the lower uterine segment becomes thinned out, while the muscular tissue of the upper segment gathers itself together into a sort of cap on the upper pole of the uterine mass. The strain on the lower uterine segment increases until it gives way, in most cases not far from the junction of the two segments. The tear tends to run across the long uterine axis. In contracted pelvis the location of the tear is determined by the grinding of some portion between the fetal head and the pelvis. On the other hand, spontaneous rupture may occur in certain cases without any process such as that described by Bandl. There may be no abnormal obstruction to the escape of the uterine contents; the labor may only have begun, and, moreover, the tear may have no special relation to the lower uterine segment, though it may, by extension involve it, too. Three sets of cases may be found in this group, viz.: (1) Interstitial pregnancy rupturing at the fifth or sixth month, even following the first labor pain. (2) Spontaneous labor following abnormal conditions, such as bicornate uterus, myomata uteri, and a uterus which has previously been the subject of a Cesarean section. (3) A small number of cases have been reported in which rupture took place at the beginning of labor in a uterus of normal conformation, and in which there was no gross complication. Cases of this sort have been recorded by Ingerslev, Hofmeier and Simpson. The first two failed to show any histological reason for the accident. Simpson's case showed signs of fatty degeneration of a marked degree.

Carcinoma and Pregnancy.—Pregnancy complicated with cancer of the cervix is unfortunately much more common than is generally supposed, says J. E. GEMMELL (Jour. of Obst. & Gyn., Brit. Empire, Feb., 1902). Solowij estimated that it occurred once in two thousand labors; in most instances it is demonstrated

in the earlier months of pregnancy and ends in abortion or is treated at once. In early cases it is the generally-accepted view that the uterus and its contents should be removed as a whole with as little delay as possible by vaginal hysterectomy; this is quite feasible up to four or four and a half months, and has been performed at the sixth month. The author finds in looking over the literature that pregnancy and puerperium favor the growth of the neoplasm, hence early operation is advised. This is more serious in the later months. Natural labor permits the introduction of other septic infections and the bruising of the tissues. After the uterus has been emptied, it must be removed as soon as possible, as involution and absorption favor the spread of carcinoma and the production of metastases (Olshausen). The best operative results have followed radical operation by the vaginal route. Whatever the treatment, the results are unsatisfactory. The choice of the route depends upon the surgeon and the individual case. Abdominal hysterectomy, with removal of the os *per vaginam*, is preferable to panhysterectomy. The methods of operation are: (1) Cesarean section and hysterectomy by abdominal route (Freund); (2) Cesarean section followed by supravaginal hysterectomy, suture of abdominal parietes, and extirpation of the cervix *per vaginam* (Zweifel); (3) Cesarean section, suture of the uterus and abdomen and then vaginal hysterectomy (Olshausen); (4) Cesarean section and total hysterectomy *per vaginam* (Dührssen); (5) panhysterectomy and the extraction of the child after removal of the uterus (Bland-Sutton).

Cesarian Section under Local Anesthesia.—A most interesting case of this variety is reported by H. R. SPENCER (Jour. of Obst. & Gyn., Brit. Empire, Jan., 1902). The patient was twenty-seven years old, a dwarf, and had a conjugata vera of 2½ inches. Twice previously this operation had been performed under general anesthesia. Before operation, Schleich's eucaïne solution was injected along the line of the previous scars for about six inches. The scar was then incised for about four inches and the incision enlarged with scissors. The child was delivered in one minute and fifteen seconds; the placenta and membranes were removed in two minutes and thirty seconds from the commencement of the operation. The uterus and abdominal wall were then sutured in the usual way. The whole operation took twenty-five minutes till the dressing was applied. The first portion of the operation (incision and delivery) was practically painless; the sewing up of the wound in the uterus was also quite painless, but there was a good deal of pain in the sewing up of the abdominal wound, especially in stitching the fascia. The mother made quite an uneventful recovery; the child weighed 6 lbs. 13 oz., was vigorous at birth and has remained so. The author does not advise this method of performing Cesarean section, especially if the patient has “nerves.”

PATHOLOGY AND BACTERIOLOGY.

Vital Blood-Staining.—As the result of their experiments in staining living blood-cells by various agents, ROSIN and BIRNBERG (Deut. med. Woch., Jan. 23, 1902) find a corroboration of the theory that living tissues do not take up stains for which those declining in vitality show a marked affinity. It may be possible to attain in this way a differentiation by means of various stains of the degree of the loss of vitality which any tissue has undergone, as the authors believe they have shown in healthy human blood. In comparison with unstained specimens they desire to call attention to the convulsive ameboid movements of the leucocytes in staining with eosin and other acid stains, to the peculiar variation in the action of the methylene-blue

on the white blood-cells and the differential staining of blood-plates by this means; also to numerous variations in the staining of the granules and chromatin network of the nuclei by different anilin dyes.

Preservation of Secretions.—A simple method of preservation of specimens for purposes of clinical microscopical diagnosis is recommended by R. ROHNSTEIN (Fortschritte d. Med., Jan. 15, 1902). It applies particularly to the various bodily excretions and its principles depend on thorough sedimentation with consequent displacement of the supernatant albuminous fluid by a solution with fixing and preserving properties and at the same time free from albumin. Its formula reads: Formol, 20 c.c., glycerin, 125 c.c., distilled water, ad 200 c.c. The special application for urine is as follows: The specimen is allowed to stand for from twelve to twenty-four hours in a conical glass with a small quantity of thymol added. The fluid is siphoned off and the sediment again washed with a like quantity of distilled water and allowed to settle for another day. This dissolves all the albumin. When the liquid is poured off, a 2-per-cent. solution of formalin is added, in amount about two or three times the quantity of the sediment, shaken, and the mixture allowed to settle. About half is then poured off and the same quantity of the preservative mentioned is added. With appropriate modifications, stomach-contents, sputum, feces, and exudates can be thus treated; the method has the advantage of obviating all actual handling of the material, and does not cause any morphological changes in the tissue or cellular elements.

Diabetes Mellitus.—The pathogenesis of diabetes mellitus is still unknown, but it is probable that there are several pathological conditions which may cause the disease. C. E. NAMMACK (Med. Rec., Feb. 15, 1902) reviews the various theories which have been advanced. The principal ones relate to a perverted glycogenic function of the liver cells, to perverted metabolism in the tissues generally, to alterations in the pancreas, and to trophic disturbances. There are two liver theories, one that the liver cells are unable to convert the sugar into glycogen and the other that the cells cannot hold the glycogen after it is formed but allow it to be transformed too rapidly into sugar. The perverted-metabolism theory supposes an inability on the part of the muscles, glands, and other glycogen savings-banks to appropriate the sugar which is brought to them in the blood. Since 1877, when Lancereaux called attention to the pancreas, various lesions of this organ have been found in etiological relation to the disease, but in some cases extensive destruction of the gland has failed to cause diabetes and the simple diversion of the secretion from the intestine also results in no glycosuria. It is, therefore, supposed that the pancreas secretes into the blood some glycolytic ferment necessary for the proper conversion of sugar into glycogen. Besides mentioning the various alimentary toxic and traumatic glycosurias, the author believes that the strenuous life which is being led at the present time acts as an important factor in inducing the disease, and, although very difficult to prove, it is probable that trophic nervous disturbances are responsible for many cases of diabetes.

Effect of Liquid Air on Pathogenic Bacteria.—This subject has been taken up experimentally by C. M. BELL (La Riforma Medica, Jan. 25, 1902). Extreme cold, produced by evaporation of liquid air, not only prevented multiplication of germs, but decreased their number, the least resistant forms succumbing to its influence. To determine the possibility of bactericidal properties inherent in liquid air, cultures were directly exposed to its action by suspension in a vessel contain-

ing it. Inoculation of animals with cultures so treated showed that liquid air does not destroy the vitality of the more virulent bacteria.

Bacteriology of Scarlet Fever.—That there is some important connection between scarlatina and the streptococci, hitherto found in many of its lesions, has been confidently asserted by many investigators. BAGINSKY and SOMMERFELD (Archiv für Kind., Jan., 1902) report the constant finding of streptococci in the tissues and blood of scarlatinal cases. In no one of the many cases investigated at necropsy were the streptococci absent from the cardiac blood and the bone-marrow. Cultures taken from the membrane of patients with scarlatinal angina showed streptococci, admixed with pneumococci, leptothrix, etc.; in only five per cent. of the cases were they associated with the Klebs-Löffler bacillus. As to their morphology, which is of a distinctive character, the streptococci form chains of varying length. The single coccus is round, but frequently is flattened at right angles to the axis of the chain; examined closely it often resembles a diplococcus, but its morphology is subject to considerable variation. When subjected to the action of blood taken from patients convalescing from scarlatina, these streptococci failed in every instance to give the agglutination reaction.

Soaps of Lime and Magnesia in Urine.—Crystals of this sediment resemble those of tyrosin, but are larger and the spicules are more tapering. G. E. PFAHLER (N. Y. Med. Jour., Feb. 15, 1902) reports three cases in which these crystals were found, but suggests no significance attached to their presence, except, perhaps, their relation to certain toxic influences. In one case the crystals were obtained during an outbreak of acute mania, but were not present at other times. The second case was one of abscess of the liver, and the third was one of cocaine-poisoning. They have also been reported in the feebly-acid urine of a case of puerperal septicemia.

The Suprarenals and Their Active Principle.—In a lengthy article H. SINGER (Therap. Monatshft., Jan. and Feb., 1902) discusses our present knowledge of the suprarenal bodies. Much has been done in recent years to bring the importance of these organs into the foreground, but the question as to what their true function is still remains unanswered. The rich nerve-supply, derived from the celiac ganglion and suprarenal plexus, has been frequently commented upon. It is interesting to note that the organs are more highly developed in negroes and less so in anomalous conditions of the central nervous system, such as hemicephaly and anencephaly. Other anatomical peculiarities are the rapidity of circulation in the organs, so that the venous blood frequently is arterial in appearance, and the occasional presence of accessory adrenals. The adrenals themselves are of relatively large size in the embryo and the active principle, which is capable of producing a green color with ferric chloride and which raises blood-pressure, is already secreted during the second half of gestation. Electrical stimulation of the cortex is without effect; faradic irritation of the medulla leads to local contraction of the renal vessels and diminished diuresis. Removal of both organs is always fatal except in animals, like the eel, which have no medullary substance, and in man any disease leading to their destruction is followed by Addison's disease, except sometimes in carcinoma, when it seems as if the cancer cells could continue the function of the normal organ. When one side only is extirpated, a compensatory hypertrophy of the remaining gland takes place. The question as to whether transplantation of foreign suprarenal tissue can save life is not definitely settled. The most prominent symptoms caused by even minute doses of the ex-

tract of the medullary part of the organ are local anemia and considerable but transient increase in blood-pressure, while the pulse is first accelerated and then slowed. Large doses are followed by a marked lowering of blood-pressure, arrhythmic pulsus bigeminus and, finally, stoppage of heart-action; excessive doses cause sudden and rapid cardiac paralysis with strongly-dilated right ventricle and with empty left ventricle. Respiration is increased with prolongation of expiration, later slowed with ultimate stoppage in expiration. The other symptoms are of less importance, pareses, diminished and later increased diuresis, etc. The search for the true active principle has been diligent. Besides albuminous principles in the form of globulins, lecithin, inosit, xanthin, leucin and neurin in combination with glycerophosphoric acid have been found. The substance affecting the blood-pressure is soluble in water, dilute alcohol, glycerin and weak mineral acids, but insoluble in ether and chloroform, and its isolation seems to be fraught with difficulties owing to its labile nature. A characteristic reaction is found in its behavior with ferric chloride, which gives a green color, turning rose on the addition of alkalis or free halogens. Though pyrocatechin gives a similar reaction there are many points of difference which make it clear that the two are not identical. Two substances have recently been isolated—suprarenin and epinephrin, but the results obtained with them do not make it appear probable that they represent the full activity of the gland. They are, however, recommended in diseases of the eyes and nose and as hemostatics.

Mast-Cells.—The fact that those cells with large basophile granules found in chronic inflammatory processes and similar ones occurring in the blood are not identical is pointed out by L. MICHAELIS (Münch. med. Woch., Feb. 11, 1902), who regrets that the name mast-cells is applied indifferently to both. A peculiar property of the granules of the mast-cells, which was long overlooked, is their solubility in water which is least marked in those normally found in the blood, but much more so in the cells of myelogenous leucemia, so that no aqueous and especially no alkaline dye can be used to identify them, even if previous fixation were perfect. The following method gives the best result: Fix the smears by means of alcohol or heat; stain for a few minutes in a saturated solution of thionin in 50 per cent. alcohol; wash in 50 per cent. alcohol; dry and mount in Canada balsam. The granules will then appear reddish-brown and the nuclei blue. In order to demonstrate the cells in tissues, embedding in paraffin or celloidin must be avoided; the tissues, after they are hardened in alcohol, are cut with a razor, stained, passed through alcohol and mounted in the usual way. The labile nature of the granules is thought to be a sign of their unripeness. In another article in the same journal A. WOLFF states that he has been able, by means of these methods, to demonstrate mast-cells in tuberculous pleural exudate, which proves their power of active emigration.

SURGERY.

Joint Conditions.—The results of good treatment are nowhere in the body more apparent to the patient than in joints, for the self-evident reason that such outcome is associated with his power of self-support. R. L. SWAN (Medical Press & Circular, Jan. 29, 1902) speaks emphatically against temporizing with tuberculosis of the joints and advocates prompt operation. He has had several cases do well under this treatment with complete or nearly complete recovery of total function. In his original operation he opened the joint freely by cutting across the patella, making first a flap on the skin, convex upward. The patella in young sub-

jects is usually rather easily divided with a knife, when the whole of the interior of the joint comes widely into view. The synovial membrane is usually found congested and its branches edematous. He irrigates the joint for a considerable time with saline solution, removes every particle of loose, flocculent material, dries off the surfaces, applies pure carbolic acid with a swab, and again irrigates very freely as before. The joint is then closed, the patella having been sutured with catgut and the skin with silkwormgut without drain. A plaster-of-Paris bandage is then applied over the dressing. In thirteen subsequent cases he has modified this procedure as follows, with equal success and without as much damage to the joint. The incision is made convex backward, reaching from the lower part of the inner edge of the ligamentum patellæ to a point (in the adult) about two inches above the base of the patella. After the bleeding has been arrested the joint is laid open. In closing the wound three layers require adaptation and suture. First, the synovial membrane, second, a muscle layer, consisting of aponeurosis below, and aponeurosis and muscle above. He has not except in one or two cases used any drains, which he does not consider necessary if the wound is dried and rendered thoroughly aseptic before closing. Analogous to tuberculosis of the knee-joint is the same disease in the bursa, which lies beneath the ligamentum patellæ, where it makes an indolent swelling, slowly increasing and obliterating the hollows which naturally exist on either side of that ligament and occasionally reaching such great dimensions as to interfere with the use of the limb to a marked degree. The chances of the knee-joint itself becoming involved in the presence of such a bursitis are, of course, very great. The need of prompt operative interference in this condition is therefore manifest.

Foreign Body in the Esophagus.—The frequency with which this condition appears in childhood renders knowledge of every case as it appears in literature advisable. C. PEACOCK (Lancet, Feb. 1, 1902) reports the following interesting example. On December 21, 1901, a six-year-old boy was admitted to the Miller Hospital, suffering from a brassy cough, regurgitation of food and fever. The history showed that in July, 1901, the child had swallowed a ha'penny piece. Vomiting occurred immediately, but was not repeated. For the next three weeks the patient said that he could "taste the ha'penny," complained of pain under the chin whenever he took food, but at the end of that time these symptoms disappeared until December, when the patient again had trouble. At the beginning of December a dry, clanging cough, difficulty in swallowing and in breathing, and a regurgitation of food appeared and as the symptoms steadily grew worse he was brought to the hospital for treatment. Examination by the X-ray showed a coin caught in the esophagus at the level of the third rib, with the flat surfaces facing anteriorly and posteriorly. On January 1st, the patient was anesthetized and an attempt was made to remove the coin with a coin catcher. As this effort failed the probang was tried and at the second effort the coin was found in the pharynx. It was black in color and entirely covered on one surface with inflammatory exudation. Immediately after removal of the coin the patient's breathing became easy and his recovery was rapid. Feeding by the rectum was at first thought advisable, but owing to his age was not successful. Mouth feeding was then cautiously begun and after two days was increased in quantity at each meal. At the end of the week he was allowed to have solid food. His recovery was complete, there being no sequela whatever in evidence.

Pathological and Clinical Significance of Abdominal Pain.—In most acute abdominal lesions pain is

the earliest, the most persistent, and the most significant sign. When hemorrhage is the only lesion, pain is the expression of violence done to the peritoneum. The commonest cause, says M. H. RICHARDSON (Boston Med. & Surg. Jour., Feb. 20, 1902), is the rupture of an extra-uterine pregnancy. The pain is often knife-like and paroxysmal; it is felt low down in the pelvis and is excruciating. Such a pain, occurring in women of childbearing age, should suggest ruptured ectopic gestation. If there be the least sign of hemorrhage and the least confirmatory sign of pregnancy, the abdomen should be opened immediately. When, after ovariectomy, the pedicle slips out of the ligature and the patient bleeds to death, there is as a rule no pain; when an extra-uterine sac bursts the pain is excruciating. In both cases there is simple abdominal hemorrhage without sepsis; the difference is in the pain. The pain of acute pancreatic disease is not sufficiently distinctive to differentiate it from the pain of other epigastric lesions. In rupture of the liver, spleen or kidney, pain is at times insignificant and at other times prominent. The severe pain of initial violence, increased by hemorrhage, gradually subsides as the signs of hemorrhage become marked. The diagnosis in traumatic cases must depend on signs of hemorrhage following a violent blow, rather than upon the character of the pain. The pain of ovarian torsion is that of a suddenly enlarging and sensitive ovarian tumor—hemorrhage, with its familiar signs, sometimes augmenting the shock of ovarian torsion. In the hemorrhage of gastric or duodenal ulcers pain is not present unless there be perforation into the peritoneal cavity. The pain of abdominal lesions dependent upon rapid and extensive extravasations of septic material, is sudden, sharp and overwhelming. It is at first continuous and violent, then paroxysmal and intermittent or dull and continuous; at first localized, it becomes generalized as the septic material spreads. In general peritonitis with excessive distention, pain usually subsides; it may disappear entirely when the general condition is hopeless. The pain of general peritonitis causes anxiety and shock. In no case of simple functional pain is there the effect upon the mind of grave apprehension or of constitutional shock upon the body. It is what precedes or accompanies pain, or, more often, what is conspicuous by its absence, that gives to pain its real significance. If, with overwhelming pain, there be rigidity of the abdominal muscles and general tenderness, and if the pulse be rapidly rising, immediate exploration is warranted. Rarely does the surgeon see such a combination with normal or subnormal temperature, for in an almost incredibly short time the temperature rises and distention, vomiting and obstipation develop. Large perforations of the bowel, appendix and stomach, all have the same course. The pain of appendicitis usually starts about the umbilicus or in the epigastrium, but soon after the onset it becomes localized in the vicinity of the appendix. In any variety of abdominal extravasation it is common for the pain to start at or about the umbilicus, or in the epigastrium, and to become localized in a short time near the seat of the lesion. A consideration of age, previous history, habit, etc., will lead the way to a differentiation of cholecystitis, gastric ulcer or pancreatitis, as the cause of acute, sudden epigastric pain.

Closure of Abdominal Incisions.—It is estimated that ten per cent. of all cases of laparotomy are followed by ventral hernia. I. S. STONE (N. Y. Med. Jour., Feb. 8, 1902) gives the following as the most frequent causes of hernia: (1) Wound infection resulting in loss of fatty and connective tissue and consequent separation of wound surfaces; (2) improper

wound coaptation or failure to unite corresponding layers; (3) enteroptosis with pendulous abdomen; (4) severe vomiting or straining before complete union. One very efficient factor in the causation of hernia is the presence of long peritoneal flaps which have been more or less bruised during the operation. Their nutrition is poor and they may either be forced upward between the two wound surfaces or from their looseness may allow pocketing of serum and blood between them and the abdominal wall. He advises, therefore, the removal of all excess of peritoneal flaps and also of all loose or necrotic pieces of muscle or fat. Each layer should be closed separately with buried catgut, so that peritoneum, fascia and muscle layers meet corresponding ones on the opposite side. Through-and-through sutures are very effective, but should be passed in such a way that, while piercing the deep fat and muscle layers, they are at a considerable distance from the wound surface, coming out near the wound at the skin and peritoneum surfaces. Pressure is thus exerted upon the deep layers as much as upon the peritoneum and skin.

Stricture of Esophagus.—A case of complete stricture of the esophagus following the ingestion of concentrated lye is reported by H. M. TAYLOR (N. Y. Med. Jour., Feb. 8, 1902), who found that, after doing a gastrotomy and passing a bougie from above downward, the stricture was at least one inch in length and so dense that no opening could be found. The stricture was near the lower end of the esophagus so that external esophagotomy was impossible; a sharp-pointed bougie, carrying a piece of silk, was finally forced through. The Abbe saw-string method was then employed until a larger bougie could be used. The patient was fed through a gastrotomy wound and the dilated and inflamed esophagus was allowed to heal. When the inflammation had subsided the child could easily swallow a little liquid food and by gradual dilatation a good-sized opening was soon produced in spite of the fact that the passage of bougies had been unable to prevent the original closure of the esophagus. He advises earlier operations in such cases, in order that the esophagus may be allowed to rest and that food be taken through a gastrotomy wound to prevent extreme wasting. Systematic passage of bougies should be continued for years, if not for life.

Circular Incision in the Operative Treatment of Varicose Veins and Ulcers.—The circular incision is warmly recommended by C. WENZEL (Berl. klin. Woch., Feb. 10, 1902), who has operated according to this method in 22 cases of varicose veins and ulcers of the lower extremity. In every case, so far as Wenzel has been able to ascertain, cure was permanent. Some of the cases had resisted other methods of treatment for long periods of time. As a rule, the incision is made at the juncture of the lower and middle thirds of the thigh; the vessels and recognizable cutaneous nerves are avoided. The veins are then divided one by one and the upper and lower cutaneous margins are approximated by a running suture. No drainage is required. In cases of ulcer cruris the greatest caution must be exercised to prevent infection of the operative wound. If possible, a dressing should be applied to the ulcerating area and left in place at least until the time of removal of the stitches and, if possible, until the circular incision has entirely healed.

Tuberculous Peritonitis.—The results of operation upon 28 cases of tuberculous peritonitis are reported by BOTTOMLEY (Amer. Med., Feb. 15, 1902) from the Boston City Hospital. The operation consists typically in opening the peritoneal cavity, evacuating the fluid, and closing the wound. In view of the fact that the uterine

adnexa furnish the point of origin of the disease in 25 per cent. of the cases, the question of the advisability of their removal is very important. If the peritoneum covering these organs be affected only as part of the general miliary peritonitis, there is no good reason for disturbing them. If, however, there be tuberculous salpingitis or oöphoritis, and if removal be not too difficult, they should be taken out. As regards omental masses and enlarged glands, the outcome of these 28 cases shows that they ordinarily cease to give trouble after simple laparotomy and need not be dealt with separately. Fibrous bands, which threaten intestinal obstructions, are to be divided. Drainage not only is of no benefit, but is apt to lead to permanent sinuses and fecal fistulae. The immediate result of the operation is almost always an improvement, at least in the general condition. There is a diminution of the pain and of the distention and a fall of temperature. Of the 28 cases, 11 were cured, i. e., were free from symptoms of the disease one year after operation; two were improved; four could not be traced; 11 died in from one to four months after operation. Thus, a cure may be reasonably expected in from 30 to 40 per cent. of all cases. According to most authorities, operation is attended by the best results in the ascitic form of the disease; in this series, operation on the fibrous variety gave equally good results. The prognosis in the ulcerative form is always bad.

Surgery of the Pancreas.—Five years ago it would have been impossible to give a detailed account of the surgical treatment for diseases of the pancreas. Such treatment simply did not exist. To-day, however, it has been possible for ROSWELL PARK (Amer. Med., Feb. 15, 1902) to describe a well-planned procedure for each of the conditions which arise in connection with this organ, and for the various complications which present themselves during the course of an operation. There are five routes by which the organ may be approached: (1) Through the lesser omentum, above the stomach; (2) through the greater omentum, below the stomach; (3) through the transverse mesocolon; (4) through the liver, with a thermocautery, and (5) through the loin, retroperitoneally. The treatment of the various conditions is as follows: Acute traumata are to be treated on general principles, by checking hemorrhages, suturing all lesions of continuity and draining. The difficulty consists in diagnosing such injuries, on account of the depth of the organ and the obscurity of the initial symptoms. Park holds that if a wound be so placed as to make injury of the pancreas even probable, it is proper to make a high laparotomy and explore the organ through the gastrocolic omentum, without reference to the injury to other viscera. Drainage may be made anteriorly or posteriorly through the loin, or in both ways. The operative treatment of tumors is confined to such as occupy the splenic end; excision is of course indicated, although the necessary ligation of vessels may imperil the life of neighboring viscera. Cysts of the pancreas are peculiar by reason of the extremely dense adhesions which they contract. The rare pedunculated forms are to be extirpated. In most cases, the cyst is tapped with the trocar, sewed to the abdominal wall, and drained. There follows a very prolonged and tedious recovery. Pancreatic calculi are always to be sought for during the course of operations for cholelithiasis. If palpated, they may be expressed into the duodenum or removed by incision into the duct or gland. Acute pancreatitis has been divided into a number of types by pathologists. All of these forms, however, betray themselves by the same symptoms, namely, those of an acute epigastric peritonitis, and demand the treatment proper for that condition.

The pancreas having been exposed by either the supra- or the infragastric route, all foreign matter, such as clot or pus is removed and necrotic portions of the gland are excised. Drainage should be made posteriorly. The treatment of subacute pancreatitis practically coincides with that just outlined. The treatment of chronic pancreatitis consists in locating and removing all calculi from the biliary and pancreatic ducts. Park closes this very brilliant review of the present aspect of the surgery of the pancreas with the admonition to operate early and promptly: "When in doubt, operate."

MEDICINE.

Intestinal Perforation by Ascaris.—The possibility of ascaris lumbricoides passing through the normal intestinal wall has been an open question; most clinicians holding that an intestinal lesion prepares the way for perforation. Of special interest, therefore, is S. SOLIERI'S (*La Riforma Medica*, Jan. 31, 1902) case of fatal purulent peritonitis of sudden onset, in which operation revealed perforation of the intestinal parietes by the ascaris, the passage of a number of the latter through the puncture being visible at the time of operation. Microscopical examination showed entire absence of localized degeneration or inflammation.

Variola Hemorrhagica.—A case which is interesting because it appears to show that variola in intra-uterine life had rendered the patient insusceptible to vaccination for fourteen years, but that after a period of eighteen years it had afforded no protection against a fresh attack, is reported by W. G. JAMES (*Lancet*, Feb. 1, 1902). The patient, a governess, seen first on January 1, 1902, complained of chill, pain in the back, nausea, nasal and bronchial catarrh, cough, furring of the tongue, overdue menses, a temperature of 103° F. and pulse 108. She had been working harder than usual and felt worn out. January 6th, she suffered from backache so severe as to prevent sleep and ordinary turning in bed. Constipation was present, for which she had taken medicine. On the evening of January 7th, she was relieved of some of the pain and passed a good night. On the 8th her menses appeared, her fever and backache became less and she felt much better. That night, however, the menses became more profuse and offensive, and later an eruption appeared on the face. On the 10th the skin of the whole face was red, inflamed, swollen, covered with vesicles, giving the idea of uniform scalding. Scattered over the neck, trunk, arms and thighs, were numerous small vesicles with reddened bases, among which were a few larger vesicles with dark brown centers, of which only half a dozen were counted. The tongue was coated with a thick white fur and on the left of the palate was a vesicle of dark brown color, about one-sixth of an inch in diameter. The catamenial discharges remained profuse, foul in character, and she was expectorating blood-stained mucus. She was removed to the hospital in the evening, but the bleeding from the uterus and lungs increased. She died January 13th. On inquiry the following facts were elicited: Six months before this patient was born her mother had suffered from a severe attack of smallpox, from which, however, she made a good recovery. The patient was born at full term and showed a few smallpox pits. In infancy she had been vaccinated and revaccinated unsuccessfully. At nine years of age she was vaccinated and revaccinated unsuccessfully and again at fourteen years of age without result. With such an experience her parents naturally thought she was immune and unfortunately she was not vaccinated when smallpox broke out last year.

THE MEDICAL NEWS.

A WEEKLY JOURNAL
OF MEDICAL SCIENCE.

COMMUNICATIONS in the form of Scientific Articles, Clinical Memoranda, Correspondence, or News Items of interest to the profession are invited from all parts of the world. Reprints to the number of 500 of original articles contributed exclusively to the MEDICAL NEWS will be furnished without charge if the request therefor accompanies the manuscript. When necessary to elucidate the text illustrations will be engraved from drawings or photographs furnished by the author. Manuscript should be typewritten.

SMITH ELY JELLIFFE, A.M., M.D., Ph.D., Editor,
No. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada

PER ANNUM IN ADVANCE	\$4.00
SINGLE COPIES10
WITH THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, PER ANNUM	8.00

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in registered letters.

LEA BROTHERS & CO.,

No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

SATURDAY, MARCH 15, 1902.

CANCER RESEARCH.

DESTRUCTIVE criticism is the notion prevalent throughout the six-part report of the Harvard Cancer Commission, read last month before the Boston Society of Medical Sciences. The pathologists carrying on this work find it greatly easier at present to determine what does not occasion cancer than to offer supported suggestions as to what conditions do produce it; and not unnaturally.

By the aid of excellent lantern slides and many well-made drawings, four researches were summarized, work in each case lasting throughout the year since the last report was delivered. Coccidia, molluscum contagiosum, torulæ, and blastomycetes had been studied by as many experimenters and observers and each found to be unconnected with carcinoma, however surely productive these are of various pathological conditions more or less similar to cancer.

In this respect the report agrees closely with that of a year ago. Quite as conclusive in a way and not a little more interesting was the description of the attempts made to inoculate the various varieties of this tumor into some of the lower animals. All of these attempted infections proved practically negative, irritation being produced to

a greater or less degree, but cancer apparently never—nor, indeed, anything very similar to it.

This is, immediately speaking, a not very encouraging consequence of these laborious, highly technical and scientific studies for it does not promise any proximate solution of this one of the most important problems of pathology, and does not therefore suggest even the outset of a step toward relieving the "poor race of men" from this wretched scourge. Still, indirectly, the tendency of this work is distinctly progressive, for even by the thoroughly scientific principle of exclusion alone, with specific positive discovery, we may at last be taught the nature and cause of the disease. If with the constant advances in the methods of preserving, of serially cutting, and especially of staining tissues, no sort of parasitic cause can be discovered in all these years of study by so many hands and eyes and brains, one might in all rationality at length be justified in shifting the responsibility of these mortal growths from parasite to host, and to a disordered protoplasmic metabolism of a mode as yet unguessed.

Our knowledge of the nature of protoplasm has developed faster and more substantially within the last three years than in as many previous decades, and it now becomes fairly probable that the normality of any tissue depends on the normal or average balance obtaining between the solid particles of the protoplasm and the liquid in which these particles are supposed to be in suspension. Whether or not this balance is an electrical tonus, as appears at least possible, or of some other nature matters little; the balance or equilibrium is certainly a delicate one, very easily disturbed, both on the instant and structurally for relatively long periods of time. We are, especially, only just beginning to realize how important are various inorganic salts in this protoplasmic equilibrium. While, then, the recent contention of the European observer that cancer depends on an excessive ingestion of sodium chloride may not be true, no one is at present prepared to say and to demonstrate that it may not be due to an excess or deficiency of any one or more of the several inorganic salts which all protoplasm contains and which are, in part, positively known to be essential to normal metabolism and function.

This second annual report of the Harvard Commission certainly strongly suggests some such solution to this problem; it implies, even more forcibly than before, that there may be some protoplasmic lack which, it may be, even the now

very fashionable *ions* may be induced before long, under the skilful guidance of some up-to-date young man, to supply! Back to the cellular protoplasm! is the present cry, for there perhaps not only the mysteries of the outgrown "vital force" of our grandsires, but assuredly of many of the more practical puzzles of physiology and of her sister, pathology, lie concealed. Of these mysteries cancer may be one—and the solution easier than to-day it seems.

PUBLIC URINALS.

SOME days ago a citizen, a lowly and doubtless very ill-bred and indelicate citizen, while in the act of urinating against the spokes of his truck wheels was taken "*in flagrante delictu*," toted to court and fined five dollars.

It is a common sight to see boys of not too tender years marching with broad and straddling gait down our busy streets and avenues casting from them, with rare satisfaction, that stream of urine which the resilient bladder of youth alone can throw. With the advent of age, however, there is a change. The lad may empty his bladder in public with impunity; the man's less elastic organ must dilate—or do the other thing. Does it not seem reasonable that many pathological lesions—hypertrophied prostate among them—may be traced to this lack of public urinals?

Some one has said that the male sex has no longer any rights or privileges. This seems to be a good example of that concept. As New York now stands it is either, burst your bladder or go to a grog-shop, where courtesy as well as custom demands that you buy a drink in exchange for the privilege granted you—of leaving one!

Throughout Southern Europe and in most of the cities of Germany, there is a urinal to be found in every single block. It is quite true that in Naples, for example, they are, to one not familiar with the sight, disgustingly public, but it's a case of "*Honi soit*." The publicity arose from the fact that in former generations there were no women of the upper classes on the streets; the urinals have not been made more private, because even to this day but few of the high-caste women course the streets save in carriages.

Our arrangement, based on the conception that the act of urinating is a criminal one—this basis being produced by the self-same forces which forbid the proper regulation of prostitution—seems vastly inferior. If, in this matter the men have no privileges, how is it with women? By just

the number of barrooms to which men may retire are they worse off than the men. England suffers from the same false modesty, urinals being as infrequent there as here. It is an Anglo-Saxon trait.

President Cantor's office is said to be a veritable municipal beehive, so busy is he with his great corps of aids in executing many plans for public improvement. Is there any question more trenchant, more gravely needing his care and efforts?

SMALLPOX AND VACCINATION.

EXPERIENCE is our most inexorable and most faithful teacher, and no more so in any other sphere of knowledge than in that of public health. It is now a well-established fact that the world, especially perhaps the more civilized nations, within the last two years have been undergoing the worst epidemic of smallpox known for at least a generation. Of all countries in Europe probably none has suffered as much as England, where the "conscientious scruple clause" of the vaccination law has been the cause of many people avoiding this precaution. While this is true in Great Britain, in Germany smallpox in its typical form is almost an unknown disease, probably for no other reason than that vaccination is obligatory and the law is vigorously and consistently enforced.

All statistics are somewhat misleading, because their bare figures cannot express all the factors in a case like this and because too often in tabulating the figures various essential elements are either altogether omitted or not given their due weight. There have recently appeared, however, tables rather more valuable than usual concerning this matter of smallpox and vaccination in England. It is well here that we look them over carefully in order to gain and remember the lesson they emphatically teach. (A. GUBB, *La Sem. Méd.*, 1902, No. 6). Historically the laxity in the vaccination law began in England in 1895 when the question of the ultimate value of vaccination was up in all its phases before the public in virtue of a committee of Parliament appointed to look into the question and formulate new laws. The objections against a fixed obligatory law were so numerous and persistent that Parliament was finally persuaded to pass a clause in the law by which a person having "conscientious scruples" against vaccination might avoid it by conforming with certain regulations. England was preceded in these tactics by one of the states of the Swiss Confederation, namely the Canton of Berne,

which in 1895 passed a similar regulation. The difference between a small community like this canton and a large and densely-populated country like Great Britain is at once apparent, but at the time did not carry probably as much weight as such a fact should.

Whatever the results in Switzerland have been, these are the present statistics as far as Great Britain is concerned, beginning with 1842, comprising therefore sixty years of the century just ended. The relative proportion of children less than five years old, of subjects between five and twenty years old, and of adults after the twentieth year who died of smallpox in London from 1842 to 1900 is the following: Adults older than twenty years of age perished only ten in a hundred from 1842 to 1850, eighteen between 1851 and 1860, twenty-six in the next decade, thirty-eight in the following, forty-six between 1881 and 1890, and, finally, fifty-four from 1891 to 1900. Persons between their fifth and twentieth years showed a variable curve, which in 1842 began with eighteen per cent. and in the decade of 1881 to 1890 reached twenty-six per cent., after irregular oscillations and since then has fallen to fourteen per cent. In young children less than five years of age, the value of vaccination was shown by a descending curve from sixty-eight per cent. in 1842 regularly and steadily to twenty-four per cent. in 1881. Since the relaxation of the vaccination laws it has risen steadily until in 1900 it reached thirty per cent.

The importance of knowing how many young children at the present time escape vaccination in England is shown by the curve taken from the records beginning in 1872 and ending in 1898. From 1872 to 1882 the curve slowly and irregularly sinks from eight to six per cent. From 1882 to 1892 it rises steadily from six to eighteen per cent. and thereafter rapidly and without breaks to thirty-three per cent. in 1898. It is therefore apparent that probably at the present time, with the disease causing ravages among infants, fully one-third are to-day not vaccinated by law in England.

If now we contemplate the death-rate of all subjects irrespective of age during the epidemic of 1901 in London we find the following: The curve for the non-vaccinated, less than a year old, begins at eighty-eight per cent. and slowly sinks to thirty-two per cent. for patients between the tenth and the fifteenth year. It then rises irregularly and steadily until ninety-eight per cent. is reached for the age between thirty and thirty-

five, when an irregular descent occurs until no deaths are reported between the fiftieth and eightieth years, while for the vaccinated no deaths whatever were reported for subjects between a few months and ten years old. At fifteen years the deaths were about one-half of one per cent. For the age limit of thirty to thirty-five the rate was sixteen per cent. The highest range of mortality for the unvaccinated is a little less than twenty-eight per cent., ranging from that down to twenty per cent. and covering the period of life between thirty-five and seventy years of age. Thereafter no deaths were reported.

It will be seen from this comparison that the death-rate in the non-vaccinated is many times greater than in the vaccinated for all periods of life up to the sixtieth year. Thereafter, so far as this special epidemic was concerned, by causes not shown in the statistics more deaths occur in the vaccinated than in the non-vaccinated subjects. Specific reasons for this certainly can be found, because they must exist in order to explain a variation from the law which so patently governs this disease in all the earlier periods of life. Hardly any one would need any further argument to convince him of the absolute value of this form of prevention against disease. There are other facts equally as convincing; for example, the experience of the German and French armies during the Franco-Prussian war. In the German army vaccination was compulsory. There were in it no epidemics of smallpox and a smaller number of cases practically than there were deaths from the disease in the French army, which had severe epidemics and at that time did not make vaccination compulsory. It therefore suffered from ravages of the disease throughout the war. Perhaps the painful experience of Great Britain and other civilized countries which have suffered more or less during the last two years from smallpox will at least show that in vaccination we have a means of protection that cannot be disregarded except at severe penalty and cost.

HELMHOLTZ AND SCIENTIFIC OBSERVATION.

ONE of the most promising signs in the medical literature of the opening century is the increased attention paid to the history of medicine. The story of the work of great observers and discoverers is not only informing in itself, but it is a source of inspiration to workers in similar fields. A more careful knowledge of the past of medicine would rid us of many claimants for long

anticipated discoveries and make the body of our medical literature less of a huge mass of endless repetition, often of things said much better by the older medical men.

Knowledge of the individual lives of great investigators would undoubtedly disclose the opportunities that lie open to all medical men for original observation. Genius is infinite patience, according to one great thinker, and the faculty for taking unlimited pains according to another. It may be that neither of these definitions exhausts the connotation of the word genius; it would seem that there is always something more—the divine spark that illuminates what has been obscure before; but there is no doubt that patient investigation has been the basis of all great discoveries.

The *Journal of the American Medical Association* devotes most of its pages of original matter in the issue of March 1st to papers with regard to Helmholtz, the semicentennial of whose discovery of the ophthalmoscope was celebrated at the last meeting of the Association. The sketches of his life and work show how much can be accomplished by the faculty for continued patient work, though spread over many things.

When Helmholtz began his professorial career, it was as professor of anatomy, physiology and pathology, at the University of Königsberg. This triple occupation, now usually divided among at least five professors, did not destroy his initiative. He was not one to be bound down by mere routine work. His physiological teaching suggested investigations in the transmission of nerve impulses and he proceeded to make them. But this did not satisfy his inquiring mind. From physiology he passed naturally to speculations on nerve tissue in its relation to psychology and thence to psychological problems. At this same time he was occupying his leisure time by observing through a telescope from the window of his room the methods of walking of his Königsberg fellow-citizens, in order to be able to write on the principles of human locomotion, a subject that had been made popular by Weber not long before.

This set of simultaneous investigations, at a time when he was not yet thirty years of age, forms a keynote to Helmholtz's life and character. Anything that was of interest to him, he followed up. He had what every great medical discoverer, Laennec, Schwann, Claude Bernard, Ramon y Cajal, has had, a manual dexterity that enabled him to construct instruments needed in his experimentation, the models of which did not

then exist. He was what we call a "handy man," besides being an inventive genius. When he needed an electrical apparatus for his work in experimental physiology he made discoveries while engaged on the construction of the machine. His investigation of the physiology of the eye and the ear led him to the formation of great principles in optics and acoustics hitherto unknown or but partially realized.

Helmholtz is the type of man that must ever stand as a model for the race in the matter of scientific advance. No obscure question balked him. The unknown had an attraction because it inspired research. Mysteries have their approachable points, and once on the track patient observation and logical methods will surely accomplish results.

The lives of such men as Helmholtz must be better known and appreciated if the new century is to see great advances in the medical sciences, for new problems have become more complex, the more obvious discoveries have been made. Every year shows, however, that there are still promising fields for investigation lying invitingly open and that the capacity for taking pains in observation will have its adequate reward.

ECHOES AND NEWS.

NEW YORK.

Dr. Taylor's Book Translated into Italian.—An Italian translation of Dr. Robert W. Taylor's work on Genito-Urinary and Venereal Diseases has just appeared in Torino from the Union Typographical office.

Bellevue Alumni Association.—Whereas, In the death of Dr. Henry R. Baldwin, our Alumni Society has lost one of its most eminent and respected members, whose noble attributes and high professional character had endeared him to all his friends and to the community in which he lived; be it

Resolved, That we express to his family our deep sorrow and heartfelt sympathy in their sad bereavement; and be it further

Resolved, That a copy of this part of our proceedings be sent to the medical journals for publication.

Committee. { J. W. S. GOULEY, M.D.,
J. F. ERDMANN, M.D.,
IRVING S. HAYNES, M.D.

Death of Dr. Munde.—The Medical Association of the Greater City of New York desires to give expression to the loss it has sustained in the death of its associate, Dr. Paul F. Munde, one of its founders and most distinguished members.

In his professional life and work he exhibited the attributes of the conscientious and conservative physician, and, throughout his whole career, in every position he occupied, he discharged its duties with fidelity and devotion, winning the respect and esteem of all who knew him.

Our deepest sympathy is extended to his afflicted

family, and we hereby resolve that this vote be entered in our minutes and a copy be sent to the family.

Committee. { W. H. KATZENBACH, M.D.,
HENRY C. COE, M.D.,
CHAS. F. ADAMS, M.D.

Stony Wolde Sanatorium.—Mrs. Leslie Carter will appear at an entertainment to be given at the Buckingham Hotel on Tuesday, March 18th, in aid of the Stony Wolde Sanatorium Association. The entertainment will also enlist the services of other artists, among them Kyrle Bellew, Miss Marguerite Hall, Miss Fielding-Roeselle, Mrs. Robert Macpherson, Miss Amy Baker, the Hauser Quartet, and Bruno Huhn. Tea will be served at the completion of the programme.

New York Academy of Medicine.—A stated meeting will be held Thursday evening, March 20th. The following symposium on Operations for the Relief of Paralytic Deformities, with Special Reference to Tendon Transplantation, has been arranged. The papers will be as follows: Introduction; History; Indications for Operation, by Royal Whitman; Deformities due to Muscular Paralysis; Method of Production; Possibilities in Tendon-Transplantation; Combinations That Have Been Made to Correct Deformity, by Wisner R. Townsend; Technic of Operation; Results of Tendon Transplantation at the Hospital for Ruptured and Crippled, by Virgil P. Gibney; Neurological Questions Involved in Tendon Transplantation, by Joseph Collins.

Section on Ophthalmology.—Monday evening, March 17th: (I.) Presentation and Reports of Cases: (a) Case of a Free Cyst in the Anterior Chamber, by R. Denig. (b) Brief Report of an Epithelioma of the Eye-lid which disappeared entirely under the use of a solution of adrenalin chloride, by Wilbur B. Marple. (II.) Paper on Preventive and Hygienic Treatment of Myopia, by Alexander Duane. (III.) Paper: The Correction of Myopia by Glasses, by Walter E. Lambert. (IV.) Paper on Operative Treatment of High Myopia, by Peter A. Callan. (V.) Discussion by Drs. Bull, Gruening, Weeks and others.

Section on General Medicine.—Tuesday evening, March 18th: Symposium on Acute Articular Rheumatism. (I.) Paper on Remarks on the Pathogenesis, by Heinrich Stern. (II.) Paper on The Symptomatology and Diagnosis, by Leonard Weber. (III.) Paper on The Complications and Sequellæ, by Frank W. Jackson. (IV.) Paper on The Prognosis and Treatment, by W. H. Thomson. (V.) Discussion by Drs. Morris Manges, Edward G. Janeway, J. W. Brannan, S. Baruch, Abraham Mayer, Andrew H. Smith, Louis Fischer, R. Van Santvoord and others.

Section on Genito-Urinary Surgery.—Wednesday evening, March 19th: (I.) Presentation of Cases: A case of possible infection of syphilis from an instrument, in the person of a physician, by Frederick Griffith. (II.) Presentation of Specimens, Mulberry Vesical Calculus, by John Van der Poel. (III.) Presentation of Instruments: (a) Prostatic Douche Tube, by Ramon Guiteras; (b) Prostatic Cooler (Psychrophor), by John Van der Poel. (IV.) Paper on The Diagnosis of Renal Calculus, by Alexander B. Johnson.

Rochester Academy of Medicine.—The following program has been announced: Section III.—Obstetrics, Gynecology, and Pediatrics, Wednesday evening, March 19th. Paper: Hysteria and Insanity at the Change of Life, by Eugene H. Howard. Discussion on Hysteria opened by Edward B. Angell. Discussion on Insanity opened by Robert G. Cook.

Section IV.—Public Health, Including Hygiene, Climatology, Physiology, Pathology, Bacteriology, and Forensic Medicine, Wednesday evening, March 26th. Paper: The Prevention and Home Climatology of

Pulmonary Tuberculosis, by William S. Ely. Discussion: The Bacteriology of Tuberculosis, by Charles W. Dodge; The Prevention of Tuberculosis by Early Diagnosis, by William L. Conklin; The Throat and Nose as Avenues of Infection, by John O. Roe; Infection through Cattle and Milk, by S. Case Jones; The Relation of Joint Tuberculosis to Pulmonary Tuberculosis, by Lewis W. Rose; The Pathology of Lymphatic Tuberculosis, by Edward W. Mulligan; Why, if Ever, Do Skin Tubercles Remain Localized? by Dr. E. Wood Ruggles; The Influence of Tuberculous Patients on other Patients in a General Hospital, by Charles D. Young.

Presbyterian Hospital Loses.—Mrs. Annie Botsford, who sued the Presbyterian Hospital to recover \$25,000 for having made, without her consent, an autopsy on the body of her husband, Albert Kent Botsford, recovered a verdict of \$300 from a jury before Justice Gildersleeve in the Supreme Court yesterday.

Expert Medical Testimony.—Expert medical testimony was the topic of discussion at the one hundred and sixty-fifth regular meeting of the Society of Medical Jurisprudence, held last week in the Academy of Medicine. Dr. Graeme M. Hammond presented the paper of the evening. He deprecated the disrepute into which he said medical expert testimony had fallen and placed the blame both on the attorney and the physician. He disapproved of physicians acting, in litigations, in the dual rôle of medical counsel and expert witness, and said:

"In trials as they are conducted at present there is no possible chance for an agreement of experts. The witnesses for the two sides are not asked to give opinions based upon the same assumptions; each counsel has his own hypothetical questions, which differ from his opponent's as the night from the day. They are based upon absolutely different assumptions of facts, and the answers given are in accord with the assumptions in each question. Should the opposing counsel exchange hypothetical questions, the answer of every expert witness would be changed also.

"The expert opinions are of no value at all unless the assumptions contained in the hypothetical questions are proved to be true. If the jury believes the assumption in one hypothetical question the expert opinion based thereon is worthy of consideration; otherwise not. If these points were understood generally it would be seen that the seeming clashing of expert opinions is in reality nothing of the sort, but that the opinions given are merely what they claim to be, honest answers to absolutely different questions."

Dr. Hammond proposed as a remedy the selection of experts by each side, in litigations, who would examine the plaintiff or defendant in each other's presence and in the presence of a stenographer, who should note all that was said and done in the examination. This, he said, would do much to secure unanimity of expert opinion.

"When everything has been said, however," he continued, "it must be admitted that expert medical testimony, which should be a valued scientific and honored method of assisting justice to know the truth, has been prostituted by those attorneys who are willing to use any means to secure a verdict or save a client, and by those physicians who are willing to lend themselves for such a purpose. It is the medical expert himself who is to blame. When he recognizes the fact the remedy will quickly follow. The medical profession is respected everywhere but in the courts; let it be seen to that it is respected there."

State Lunacy Bill.—The Medical Association of the Greater City of New York at its meeting last week at the Academy of Medicine adopted unanimously and

without debate the following, addressed to Governor Odell: *Whereas*, Lunacy Bill No. 368, recently passed by the Legislature, has abolished the positions of the two Medical Superintendents at Ward's Island, New York, and has placed the two offices under one head, thus putting over 4,000 insane patients under one management; and

Whereas, A supplemental bill amending Bill No. 368 is now before the Legislature restoring these positions so that the division of the hospitals, as they formerly existed, one for men and one for women, may be maintained; therefore, be it

Resolved, That the Medical Association of the Greater City of New York heartily indorses this amendment and advocates its immediate passage.

For Compulsory Vaccination.—A bill amending the Public Health law was introduced in the Assembly March 6th by Assemblyman Fuller. It gives local boards of health the power to enforce general vaccination when required to do so by the State Commissioner of Health, who is authorized to make such a requirement for the protection of the public health.

PHILADELPHIA.

Decrease in Smallpox Cases.—During the week ending March 8th but 47 cases of smallpox were reported, this being the smallest number for any week since early last fall. The \$225,000 appropriated for expenses attending the suppression of smallpox is now available and being disbursed. Of this amount \$82,000 will be required to compensate the vaccine physicians employed by the city.

Post-Graduate Work at University.—The announcement has been made that the University of Pennsylvania will establish a spring school of medicine for practitioners. This movement has been contemplated for some time and will include courses of instruction in nearly all the departments of medicine. The regular faculty will have a prominent part in the teaching.

Women to Fight Expectoration Nuisance.—William H. Sims, station-master of the Broad Street Station, delivered an address on "Expectoration in Public Places and the Best Methods of Preventing It," at a meeting of the Woman's Sanitary League on March 3d. He discussed the subject mainly from the point of view of a railroad man, but said that the remedy was a law inflicting a penalty for expectoration in public places. Discussion resulted in the conclusion that State aid should be sought to remedy the evil and a committee was appointed for this purpose.

Surgeons for the Guard.—The following appointments in the Medical Department of the National Guard of Pennsylvania are announced: Alfred G. Wood, of Philadelphia, surgeon, assigned to Third Regiment; John C. Hirst, of Philadelphia, assistant surgeon, Third Regiment; John L. Brubaker, assistant surgeon, Sheridan Troop; Edwin A. Nicodemus, assistant surgeon, Governor's Troop.

Address on Immunity and Serumtherapy by Dr. Welch.—Dr. William H. Welch, of Johns Hopkins, addressed the students of the Jefferson Medical College March 7th, as the guest of the J. C. Wilson Medical Society. Dr. Welch, after explaining the theory of immunity, gave his personal opinion of the value of various serums and antitoxins. He stated that many failures in this line were due to the attempts to introduce methods of inducing immunity which were not based on successful experimental investigations. Various diseases were then mentioned, with comments on the status of attempts to secure immunity to each. Immunity to hydrophobia can be secured and this has proven of great value. Dr. Welch said that hydro-

phobia was not an extraordinarily uncommon disease and that when a case was diagnosed as such by a reputable physician it should be regarded as correct. The disease can be diagnosed with as much certainty and precision as can typhoid fever. The statistics of the Pasteur treatment were given to show its great value. This is in no sense a treatment after symptoms have begun, but is an active immunization, a sufficient time intervening between the inoculation and the disease to allow of this. The method is an effective preventive treatment. Immunization against cholera is not yet on a good experimental basis. Regarding typhoid fever a definite opinion cannot now be given as to the efficacy of attempts at immunization. The fact that some cases which are clinically typhoid fever show the paracolon bacillus instead of the bacillus typhosus complicates matters. The point was made that when the Widal reaction is negative the paracolon bacillus should be sought for. Against the plague there is a method of acquiring a quite substantial active immunity. Dr. Welch said he should submit to the Haffkine treatment were he going to an exposed place. Regarding serumtherapy two divisions were made—antitoxins and bactericidal serums. Of the former, three are on a sound experimental or practical basis, viz., diphtheria and tetanus antitoxins and antivenene. The efficacy of diphtheria antitoxin is so well established that statistics need no longer be read. The use of tetanus antitoxin is disappointing, because the symptoms appear so late that the antitoxin cannot be injected in time to be effective. It may be of some value in subacute or chronic cases. It has some prophylactic use and this should be employed more frequently in human beings who are exposed to garden soil, stable refuse, etc. Antivenene is now on a sound experimental basis. Of the bactericidal serums none are at present of great practical value, antiplague serum showing the most promise. Too many conditions must be favorable for their action—the presence of their complement, the power of destroying bacteria after uniting with the complement, etc. Antitoxins are of proven value. The bactericidal serums are yet in an experimental stage, but their further development is of very great importance.

A New Trephine.—At the Academy of Surgery, March 3d, Dr. J. Chalmers DaCosta exhibited a new instrument for trephining the skull, its use being demonstrated by the inventor, Dr. J. C. Stellwagen, a dentist and junior medical student. The instrument, although not yet perfected, is a very ingenious one, being especially adapted to cut osteoplastic flaps. It consists of a handle and shaft like an ordinary trephine, but carrying an extensible arm at right angles. This carries at its outer end a detachable knife or saw for cutting scalp or bone. The shaft has a center pin or can be rotated on a metal plate having a depressed center, it being fastened to the skull by points on one side long enough to be driven through the scalp into the bone. The instrument has given great satisfaction in the case of a child upon whom it was used.

CHICAGO.

Home for Journal of the American Medical Association.—F. W. Zander & Company have sold for John C. Nym'n to Dr. E. Fletcher Ingals, a trustee representing the American Medical Association, the premises on the Northeast corner of Dearborn Avenue and Indiana Street for \$42,500 cash. The present improvements consist of five two-story-and-basement brick dwellings. It is the intention of the purchaser for the present to remodel two of the houses and use the premises for the offices and publishing rooms of the *Journal of the American Medical Association*. It is said that the price paid represents a value of \$425,000 a

front foot in Dearborn Avenue and \$531.25 a front foot in Indiana Street.

Appointment of a Skiagrapher for Cook County Hospital.—The County Board has elected Dr. Harry J. Haiselden attending skiagrapher to the County Hospital. Dr. Haiselden will have charge of the X-ray apparatus recently installed there.

Public Health Matters.—Twenty per cent. more deaths were recorded by the Bureau of Vital Statistics of the Health Department for the week ending March 1st than for the week previous, and 46 per cent. more than for the corresponding week of 1901. The exact figures are 434 one year ago, 529 the week before last, and 634 last week. The annual rates per one thousand of population are 12.87, 15.14 and 18.15, respectively, this latter figure being unpleasantly near the average New York mortality-rate. For this city it is the highest on record for the season of the year. The causes of death showing the greatest mortality as compared with the previous week are, with the exception of pneumonia, the chronic diseases, and the result is seen in a 20 per cent. rise in the deaths of the aged, those over sixty years. Nervous diseases show 72 per cent. increase; consumption, 46 per cent.; pneumonia, nearly 35 per cent.; Bright's disease, nearly 32 per cent., and diseases of the heart, 30 per cent. There were 16 suicides and 36 other violent deaths, an increase of 53 per cent. over the number in the corresponding week one year ago and of 85 per cent. over that of the previous week.

An Analysis of Three Hundred and Twenty-Eight Operations upon the Gall-Bladder and Bile-Passages, with Observations upon the Same.—Dr. Wm. J. Mayo of Rochester, Minnesota, read a paper with this title, by invitation, before a recent joint meeting of the Chicago Medical and the Chicago Surgical Societies. A study of these cases brings out some general features of interest. Three hundred and eleven of the number were of benign origin, and the number of deaths was eight, giving a mortality of about 2½ per cent. Seventeen were for malignant disease, with three deaths, a mortality of 18 per cent. In 214 cases the stones were located in the gall-bladder or cystic duct or both, with two deaths. In about 10 per cent. of these cases there was obstruction of the cystic duct by a stone or stones were contained in the cystic duct. The after-history of many of these cases in which the cystic duct was involved and simple cholecystostomy performed was not wholly favorable, and for cases in which this duct has been obstructed or in which stones have been lodged in the duct for a length of time cholecystostomy is insufficient, and the gall-bladder should be extirpated at the primary operation if the patient be otherwise in good condition.

Stones in the Cystic Duct.—Stones in the cystic duct are often more easy to remove with the gall-bladder than without it. If the peritoneum binding it to the liver be divided on each side, the connective tissue between can be easily separated with the finger, and by using the gall-bladder as a tractor, and, if necessary, dividing the peritoneal and muscular coats just above the cystic duct, the mucous tube of the latter will strip out readily, bringing the stone with it. The mucous coat about the neck of the gall-bladder is thick and separates easily from the outer coats, while the fixation by adhesions is to the outer coats alone. At the fundus, the mucous membrane is less easy to separate, and a combination of amputation of the fundus with removal of the mucous coat from the lower portion of the gall-bladder and cystic duct, makes cholecystectomy a safe operation.

Cholecystitis.—In this group there were 34 cases, with five deaths. This mortality calls attention at once

to the serious nature of the infections. All the cases in which an acute suppurative condition existed at the time of the operation, with or without stones, and all cases in which the gall-bladder was thickened and contained more or less rosy mucus and bile or sand-like sediment, without stones, were classified at the time of operation as cholecystitis. The essayist has long held the view that the dependent fundus was a mechanical factor which rendered the possibility of stone formation in cases in which the stagnation of the bile, infection of the gall-bladder and obstruction of the cystic duct were the other factors; that is to say, if the cystic duct were at the bottom, sediment would pass out first. For this reason, it seems that cholecystitis might be more liable to exist without stones in the more perfectly drained cases, in which the fundus was above the level of the cystic duct. In two cases, acute suppurative cholecystitis followed typhoid fever. At the time of operation the typhoid bacillus was found in pure culture, and the patient's blood gave the Widal reaction. In both cases stones were present in the gall-bladder, but on going into the history, it could be shown almost beyond a doubt that the gall-stones existed before the advent of the typhoid, and merely determined a lowered resistance.

Stones in Common Duct.—In thirty-one cases stones were found in the common duct, with one death. In only one case was it possible to remove the stones through the cystic duct by dilating it. In 29 cases, the duct was incised and the stones removed. In five cases this was accomplished by separating the gall-bladder from the liver, and incising the free surface down to and along the cystic duct, to the common duct, and the latter was incised at the juncture. In a number of these cases the head of the pancreas was enlarged, and in six cases more or less pancreatic secretion came out with the bile.

Jaundice.—Jaundice in connection with stones in the common duct was a most variable feature. In many cases it was so slight as not to attract especial attention, and the finding of stones in the common duct was a surprise. In the majority the jaundice was marked. One patient with extreme jaundice from a stone impacted in the cystic duct at its juncture with the common duct and three with jaundice from malignant disease, died from post-operative capillary oozing. In all of these cases there were subcutaneous ecchymotic spots, looking like purpura hemorrhagica before operation. Every patient who had jaundice with this condition died in this way. No patient in whom this was not present died from this cause, although several were in extreme jeopardy.

Cholecystenterostomy.—This operation was performed three times for chronic pancreatitis and three times for malignant disease. The anastomosis was made to the duodenum twice and to the transverse colon four times. So far as he could judge, the anastomosis to the colon answered every purpose. The Murphy button was used in making the anastomosis.

Exploration.—In twelve cases negative exploration was made. This, however, includes only the cases in which the abdominal wall was incised independently for this purpose, and does not fairly represent the mistakes in diagnosis. In some of the earlier cases a small gall-bladder, with thickened walls, extensively adherent, was found, and he contented himself with loosening the adhesions. In reoperating upon one case, a ball-valve stone of small size was found in the common duct, yet so little jaundice was present as to seemingly preclude the possibility of its presence in this locality. In two cases seen since he had found a rolling stone in the common duct under precisely similar circumstances. Adhesions about a small gall-bladder should lead to a

careful exploration of the common duct before deciding that the adhesions alone are the cause of the symptoms.

CANADA.

Smallpox Coming from Quebec to Ontario.—The Ontario Provincial Health Office has received word that several men infected with smallpox have recently crossed the Ottawa River into Ontario. The men come from lumber camps and immediate steps have been taken to stop this. The Quebec Board of Health has divided that Province into ten districts with an inspector for each. The continued spread of the disease has compelled the Government to action.

Protestant General Hospital Report, Ottawa.—The fifty-first annual report of this institution has been issued. The most important event in connection with the hospital during the past hospital year has been the amalgamation with the Lady Stanley Institute. The number of patients under treatment last year was 1,400 as against 1,324 for the previous year. Of these 702 were pay patients. In the out-door departments 2,163 patients received treatment. Of these about 700 were Protestants. The fees for private patients will be raised and an effort will be made to secure a larger *per diem* allowance from the city and surrounding municipalities.

New Toronto Medical Building.—Satisfactory arrangements have at last been made with the Ontario Government with regard to the erection of the new medical building of the Medical Faculty of Toronto University. The Senate of the University will be empowered by the Government to set aside the necessary \$125,000 for the construction of same. This will be on the plan of the new buildings for Harvard University. The Laboratories will be constructed on the "unit system," each one being normally 23 by 30 feet and capable of being enlarged or decreased in size for large or small classes. The new building will be located in the Queen's Park contiguous to the other buildings of the University.

Getting Matriculation by Act of Parliament.—Some Quebec students apparently think there are easier ways of securing matriculation in medicine than by the ordinary course of examinations. A bill is before or rather has been before the Quebec Legislature during the present session to permit medical students who commenced study prior to 1899 to dispense with the matriculation examination. A similar measure of relief was granted several students in 1898 who had commenced their studies prior to 1896. As the Hon. Mr. Flynn, the leader of the Opposition, put it, if this sort of thing is to continue in that Province, the qualification of a classical education for the professions had better be abolished. On the motion of the Hon. Dr. Guerin the measure received the six months' hoist by a vote of forty-five to fifteen.

New Civic Hospital for Montreal.—The question of a new civic hospital is to be discussed again by the City Council of Montreal which has long required such an institution, but never more than it did at the present time since the old hospital has been in occupation for the past year with smallpox patients. The trouble all along has been friction between the Catholic and Protestant element, the former desiring that there be two hospitals, one for the Catholics and one for the Protestants. Archbishop Bruchesi has appealed to the City Council for a separate Roman Catholic Hospital, as His Grace puts it, in the cause of peace and liberty.

Toronto Orthopedic Hospital.—The Trustees of this institution are appealing to the Canadian public for donations for their new building. It is the only hospital of its kind in all Canada which exists exclusively for the benefit of the lame, crippled and deformed. Although opened only four years ago, it has

progressed far beyond the most sanguine expectations of its promoters. Twenty thousand dollars is still required to complete the alterations and additions to the new property.

Congress of French Physicians of America.—A few days ago a large gathering of French-Canadian physicians of the Province of Quebec was held at Laval University, Montreal, at which meeting it was unanimously decided to hold a congress of the French doctors of America on the occasion of the jubilee celebration of Laval University, Quebec, in June next. Dr. Brochu, Professor of the Medical Faculty of Laval, Quebec, was elected president; Dr. E. P. Lachapelle, Vice-President for Montreal and the Province of Quebec; Dr. C. Prevost, Ottawa, for the Province of Ontario, and Dr. Archambault of Cohoes, New York, for the United States. Two general secretaries were also elected, Dr. A. Simard of Quebec and Dr. le Sage of Montreal. It was also decided to ask the following to become honorary presidents to represent the universities in the Province: Dr. Craik of McGill, Dr. F. W. Campbell of Bishop's, Dr. Rottot of Laval, Montreal, and Dr. Simard of Laval, Quebec. A general committee was appointed to make all arrangements and to fix the number of days the congress would last.

Curtailling the Powers of the Quebec Board of Health.—A bill has been introduced into the Quebec Legislature by one of the members of that body seeking to amend the health laws of the Province. The member in question believes that the powers of the Board of Health are too arbitrarily exercised, especially as regards vaccination, and therefore he desires the municipal councils to have control of health affairs. Although at the present time all the civilized countries of the world are taking active measures in the suppression of smallpox, here is a legislator, in whose Province the disease has been rampant, who wishes to relax the stringency of the laws and thus permit a greater spread of the disease. The bill has been referred to the Committee on Legislation.

Toronto Clinical Society.—On the evening of March 5th the Toronto Clinical Society held its regular monthly meeting. Dr. Herbert A. Bruce reported the first case of recovery following operation for perforation in typhoid fever which has occurred in Canada. The patient, who was formerly a house surgeon in one of the Toronto hospitals, but who had commenced the practice of his profession in a small town in the western portion of the Province of Ontario, contracted typhoid fever last summer while in attendance on two or three cases in his own practice. He was attended by a fellow practitioner from a neighboring town. The case went on in the usual way until the third week, when in the middle of the night he was seized with very severe pains in the right iliac region. His medical adviser was summoned, but, as he was away in the country in attendance upon another patient, a confrère in the town was called in his place. An injection of morphine was administered which quieted the pains, and when the regular attendant arrived the following morning the patient was resting comfortably. He, however, considered that perforation of the bowel had occurred in the night and held to this diagnosis against the patient himself and three other practitioners who were summoned in consultation. Dr. Bruce of Toronto was summoned, who confirmed the diagnosis of perforation, and an immediate operation advised. This was done eighteen hours after the time of the supposed perforation. A small opening about the size of the lead in a lead pencil was found in the ileum, about eighteen inches from the ileocecal valve, and was closed in the usual way. From this the patient made a good recovery, but other trouble ensued and Dr. Bruce was

again summoned to the bedside of the patient. A sub-phrenic abscess had formed above the liver. This was evacuated and about two and a half quarts of pus withdrawn. After this operation the patient very nearly collapsed, but finally rallied. The patient and his medical attendant were present at the meeting when Dr. Bruce reported the case. He expressed his gratification to both gentlemen for his life which he stated he undoubtedly owed to them, especially so to his medical attendant who had made the diagnosis of perforation.

Obituary.—Dr. George W. Jackes of Eglinton, North Toronto, died suddenly on the morning of March 7th of apoplexy. He was in his fifty-first year. He had practised in Eglinton for over twenty-five years. Dr. James McLaren of the same place, also died on March 7th. He was born in 1824 and received his degree in Arts at Queen's University, Kingston, about 1850. He studied medicine in the old Toronto School of Medicine under Dr. Rolph, graduating M.B. about 1853.

GENERAL

"Georgia Journal of Medicine and Surgery."—Dr. W. E. Fitch, founder and for many years editor and business manager of the *Georgia Journal of Medicine and Surgery*, published at Savannah, Ga., has sold his interest in the publication to his former associate and co-editor, Dr. St. J. B. Graham, who becomes editor and sole proprietor. The *Journal* under Dr. Fitch's editorial management, from the appearance of the first issue, merited the support of the profession, and gradually, year after year, made for itself a place among the best medical periodicals of this country. Dr. Fitch will devote his entire attention to the practice of his profession in Savannah, Ga.

Autopsy of Doodica.—Examination of the body of Doodica, one of the Hindoo sisters separated by operation, showed the presence of a large abscess in the lower part of the abdomen with perforation of the cecum and appendix; there was also a general tuberculous peritonitis, but no appearance of trouble at the site of operation and no trace of hemorrhage. The heart was well to the left in the normal position and there was no trace of pericarditis, pleurisy, pulmonary tuberculosis or brain disease. Death was due to tuberculous peritonitis and to the tuberculous perforation of the cecum and appendix causing blood-poisoning.

An Institute for Phototherapy.—The Queen Regent of Spain has given 10,000 pesetas for the foundation of an institute for phototherapy at Madrid.

Gregory Testimonial Banquet.—Arrangements are being rapidly completed for the Gregory Banquet to be held in St. Louis on April 17th. Hon. A. M. Dockery, Governor of Missouri, himself a physician and a former student of Dr. Gregory, will preside. Every indication points to a large attendance.

St. Louis Medical Society of Missouri.—At the last regular meeting held Saturday, March 8th, Dr. L. T. Pim read a paper on Exstrophy of the Bladder; Operation; Union by First Intention, and Dr. Sidney I. Schwab read a paper on Work as a Therapeutic Agent in Hysteria and Neurasthenia.

Second Brussels Congress for Prophylaxis of Venereal Diseases.—This Congress is to meet September 1-6, 1902, and the following subjects are suggested for discussion:

PUBLIC PROPHYLAXIS.—Whereas, on the one hand, it is the duty of the public authorities to safeguard society against contagious diseases, which, by their frequency and by the facility with which they are spread, constitute a public danger, and while, on the other hand, quite apart from the sanitary point of view, it is their

mission to protect minors abandoned by their parents. What measures of public prophylaxis, under the form of legal provisions, should be taken against venereal diseases, specially with reference to the following points? Relative to prostitution: (1.) The prostitution of minors; (2.) the actions of public bodies whether in the interest of public morality and tranquillity, or from a sanitary point of view; (3.) procurers and bullies. Not associated with prostitution: (1.) The protection of minors of both sexes; (2.) the organization of measures of relief for those suffering from venereal diseases; the duties of charitable institutions to those so suffering; (3.) suckling by wet nurses; contagion by midwives and nurses; arm-to-arm vaccination; contagion in factories and workshops by means of instruments of labor; registry offices, etc. Is it necessary to apply the principles of civil and penal responsibility for the transmission of venereal diseases?

INDIVIDUAL PROPHYLAXIS.—Taking into consideration that if the public authorities have to take prophylactic measures against venereal diseases, the duty of self-preservation is incumbent on every one; on the healthy, by the avoidance of all dangerous contact with an infected subject, and on the diseased by avoiding the possibility of infecting others. (1.) What are the best means of enlightening the youth and the general public on the social and individual dangers of syphilis and gonorrhea, as well as the methods of contagion of these two diseases, direct or indirect? (2.) How can one best facilitate individual prophylaxis by means of charitable institutions (dispensaries, refuges, etc.) and the medical treatment of patients of both sexes suffering from syphilis or gonorrhea?

STATISTICS.—What should be the uniform basis on which the statistics of venereal diseases in all countries should be formulated?

American Association of Urologists.—This Association was organized on February 22, 1902, essentially for the purpose of the further development of the study of the urinary organs and their diseases. Although most of the founders of the Association are specialists in genito-urinary diseases, membership is not limited to those engaged exclusively in this specialty. Thus, gynecologists who embrace renal and vesical surgery in their work are among the founders, as there are several who devote themselves to the microscopy and chemistry of the urine, as well as a number of practitioners interested in the study of the kidney from a medical standpoint. The Association consists of active, corresponding and honorary members, and is in great measure modeled upon the plan of the Société Française d'Urologie, modified to suit American circumstances and conditions. Thus, whenever possible, the branch associations, throughout the United States, British Possessions and Spanish America will hold their meetings on the same evenings as does the parent association in New York (the first Wednesday in each month). The work of the Association is principally clinical, for the demonstration of new methods of the technic of examination and treatment. The annual meeting of the American Association of Urologists will be held on the last day and the day following the annual meeting of the American Medical Association. The officers of the Association are: Ramón Guiteras, M.D., President; Wm. K. Otis, M.D., Vice-President; John Van der Poel, M.D., Treasurer; Ferd. C. Valentine, M.D., Secretary; A. D. Mabie, M.D., Assistant Secretary.

Association of American Physicians.—The Preliminary program of the Seventeenth Annual Meeting of the Association of American Physicians, to be held in Washington, D. C., on April 29th and 30th and May 1, 1902, includes the following papers: President's Address, by James C. Wilson, Philadelphia; Pneumococ-

cus Arthritis, by James B. Herrick of Chicago; A Case of Osteitis Deformans, by R. H. Fitz of Boston; A Case of Osteitis Deformans and one of Hyperostosis Cranii, by Morton Prince of Boston; Report of Cases of Bronchiectasis Following Influenza-Pneumonia, by W. W. Johnston, Washington; Pulsations in the Chest, by Arthur R. Edwards of Chicago; Spontaneous Non-tuberculous Pneumothorax, by M. Howard Fussell of Philadelphia; The Prognosis of Pleurisy with Effusion, by Richard C. Cabot of Boston; Healed Ulcerative Endocarditis, by James B. Herrick of Chicago; Tuberculous Pericarditis with Remarks upon Paracentesis and Incision, by Beverley Robinson of New York; The Condition of the Heart in Pregnancy, by Alfred Stengel and W. B. Stanton of Philadelphia; A Report of Cases of Thermic Fever Treated at the Pennsylvania Hospital in the Summer of 1901, by M. J. Lewis and F. A. Packard of Philadelphia; Results of Trauma of the Pancreas, Charles G. Stockton of Buffalo; Clinical Manifestations of the Early Stage of Cirrhosis of the Liver, by Frank Billings of Chicago; Drainage in Chronic Intestinal Catarrh: Its Importance and Technic, by Norman Bridge of Los Angeles; Intestinal Hemorrhage: Its Relation to Duodenal Ulcer, by Henry Jackson of Boston; A Clinical and Experimental Investigation of the Value of Gelatin as a Hemostatic, Alfred Stengel and D. L. Edsall of Philadelphia; Prognosis and Treatment of Tuberculous Peritonitis Based on the Massachusetts General Hospital Experience for the Past Ten Years, by Frederick C. Shattuck of Boston; Angiomyositis, by W. S. Thayer of Baltimore; Splenic Anemia and Its Varieties, by William Osler of Baltimore; Report of a Case of Lymphatic Leucemia, by D. D. Stewart of Philadelphia; Mitosis in Circulating Blood, by George Dock of Ann Arbor; The Pathology of Pernicious Anemia with special reference to the Changes in the Hemolymph Glands, by Eldred Scott Warthin of Ann Arbor; Pathology of Adrenalin Diabetes, by C. A. Herter of New York; A Case of Cystic Degeneration of the Kidneys, by I. N. Danforth of Chicago; A Study of Bacterial Cells, by Victor C. Vaughan of Ann Arbor; The Surface Action of Metals on Bacteria, Toxins and Enzymes, by F. E. Novy of Ann Arbor; Report of the Presence of Anguillula Aceti in the Urine of Two Patients Mistaken for Strongyloides Intestinalis, with Lantern Slide Demonstration, by Frank Billings and Joseph L. Miller, Chicago; A Case of Hematuria, by James Tyson and Alfred C. Crofton of Philadelphia; Histological Alterations of Cytotoxic Intoxication, by Simon Flexner of Philadelphia; An Estimate of the Amount of Toxin in the Blood of a Horse Infected with Tetanus, by B. Meade Bolton and Carl Fisch of St. Louis; and Comparative Toxicity of Ammonium Compounds, by B. K. Rachford and W. H. Crane of Cincinnati.

Medical Clerk and Translator.—The United States Civil Service Commission announces that on April 22, 1902, an examination will be held for the position of medical clerk and translator in the Bureau of Animal Industry, Department of Agriculture.

The examination will consist of the subjects mentioned below, which will be weighted as follows: (1.) Translation of medical German, 25, (2.) Translation of medical French, 25, (3.) Translation of medical Italian, 10, (4.) Translation of medical Spanish, 10, (5.) Technical bibliographic work in medicine and zoology, 10, (6.) Medical and zoological terminology and nomenclature, 10. (7.) Experience, 10. Age limit, twenty years or over. From the eligibles resulting from this examination it is expected that certification will be made to the position of medical clerk and translator in the Bureau of Animal Industry, Department of Ag-

riculture, at a salary of \$720 per annum, and to other similar vacancies as they may occur. This examination is open to all citizens of the United States who comply with the requirements. Competitors will be rated without regard to any consideration other than the qualifications shown in their examination papers, and eligibles will be certified strictly in accordance with the civil service law and rules. Persons who desire to compete should at once apply to either the United States Civil Service Commission, Washington, D. C., or to the secretary of the local board of examiners at the places mentioned in the accompanying list, for application Forms 304 and 375, which should be properly executed and filed with the Commission at Washington. The regulation requiring that applications be filed at least ten days prior to the date of the examination will be waived in accepting applications for this examination.

St. Joseph's Sanitarium.—Plans for an extensive addition to St. Joseph's Sanitarium, at Silver City, New Mexico, are completed, and the work will be begun shortly. This institution, which was initiated only last fall, has outgrown its present quarters and the new building is a necessity. The completed plant will form four sides of a square or court; that is, old California Mission style. The building will be but one room thick and one story high, with porches outside and inside, upon which the rooms will open by means of French windows. The kitchen, dining-room and research laboratory will be in separate buildings. A complete hydrotherapeutic apparatus will be installed. The management of the institution is entirely under the control of the Advisory Board. The immediate care of patients is entrusted to Dr. W. T. Williams and Dr. E. S. Bullock is the pathologist and diagnostician. The plan of treatment pursued is the careful application of the Brehmer principles in an ideal climatic environment.

Obituary.—Dr. Charles O. Carpenter, aged sixty-three, and one of the best-known physicians and surgeons of Massachusetts, died last week of pneumonia at his home in Holyoke.

Prof. Moriz Kaposi of the University of Vienna, the celebrated dermatologist, died March 6th. He was born at Kaposvar, in Hungary, on October 23, 1857. In 1879 he succeeded Prof. Hebra at the University of Vienna. His principal work, on the pathology and therapy of skin diseases, has been translated into several languages.

Dr. W. Fontaine Lippitt, a distinguished citizen and physician of Charlestown, Jefferson County, W. Va., died March 11th in his seventy-first year, at his home in that city. Dr. Lippitt was a son of the late Rev. Dr. Lippitt, who was for many years an eminent clergyman in the Protestant Episcopal Church, occupying a position as professor in the Virginia Theological Seminary, near Alexandria, and was closely related by marriage with the descendants of George Washington. Dr. Lippitt's widow and eight children survive him.

OBITUARY.

CHRISTIAN FENGER, M.D.

This famous surgeon died in Chicago Friday evening, March 7th, of pneumonia, after a week's illness. He was attended by Drs. Henry B. Favill, Frank Billings, and J. B. Herrick. Dr. Fenger's name and fame are known wherever modern surgery is practised. He had gained an international reputation in his profession and was classed as one of the foremost surgeons of his time. His advent in Chicago, a quarter of a century

ago, meant much to the progress of modern medicine and surgery in the West. He was a profound teacher of medicine and surgery based on sound pathology. During the last thirty years he contributed more than eighty articles to medical literature, and all of his writings breathe the same spirit of critical inquiry and originality of thought. They have all found a permanent place in medical literature. He was a member of the leading medical societies in this country as well as in Europe, and had served as surgeon on the hospital staffs of Cook County, Presbyterian, Tabitha Norwegian, Passavant Memorial, Lutheran, German and German-American Hospitals.

Dr. Fenger was born in Copenhagen, Denmark, November 3, 1840. While still a medical student, in 1864, he served as surgeon in the war between Denmark and Germany. He was graduated from the University of Copenhagen in 1867, and for two years was assistant in Wilhelm Mayer's Ear Clinic in Copenhagen. At the outbreak of the Franco-German war he became surgeon in the Red Cross Ambulance Corps, serving in this capacity throughout the war. From 1871 to 1874 he

torium Hotel by the medical profession. Nearly six hundred guests were present from Chicago and the Middle West and Northwest; also some prominent surgeons from the East. A loving cup was presented to him. Not long before the banquet Dr. Fenger had been honored by the King of Denmark, who conferred upon him the Order of Ridder of Dannebrog.

One of the regrettable features of Dr. Fenger's death is that it came before he had carried out a cherished idea of enjoying a country house. He had sold his city residence and this spring was to build in Winnetka, where he had spent his summers for several years, a Norwegian house, following to the minutest detail the architecture and arrangement of houses in his fatherland. He left a widow and two children. Up to his death he held the presidency of both the Chicago Medical and the Chicago Surgical Societies.

CORRESPONDENCE.

OUR LONDON LETTER.

(From Our Special Correspondent.)

LONDON, March 1, 1902.

THE LEGAL RECOGNITION OF MIDWIVES—THE PIONEER OF THE OPEN-AIR TREATMENT.

LEGISLATION for the regulation of obstetrical practice by midwives has been strongly opposed by a section of the medical profession in this country ostensibly in the interest of poor women suffering from the curse pronounced on Eve, but really from a less altruistic motive. It has been pointed out over and over again that legislation on the subject was urgently needed; that the medical profession would not be affected in any way—except perhaps beneficially—by such legislation inasmuch as the women for whom skilled help in their hour of trouble is to be provided are too poor to pay a doctor; and that Parliament would sooner or later be driven by the voice of the people to legislate on the subject. The Government has been in no hurry and has hitherto left the question an open one as to which its supporters could take any course they pleased. It has also sought to ascertain the views of the medical profession on the subject. Unfortunately, the profession, under the evil inspiration of a band of short-sighted irreconcilables, has taken up an attitude of mere selfish obstructiveness, and the Government, which would doubtless have been glad to give due weight to the advice of the General Medical Council if the profession had not allowed its feeling to be misinterpreted by a small band of noisy fanatics, is now evidently determined to dispense with any assistance from that quarter. On February 26th a bill for the legalization of the midwife passed its second reading in the House of Commons. Last year a measure which would have given the medical authorities a fairly tight hold on the midwives was defeated owing to the opposition of Sir Walter Foster and one or two other medical Members of Parliament. The present bill practically leaves the midwife uncontrolled. Sir Walter Foster, with the help of Sir John Batty Tuke, also a physician, again tried to wreck the bill, but Dr. Farquharson and Sir Michael Foster, the professor of physiology at Cambridge, strongly supported the bill, and the majority of the House had clearly made up their minds to pass it. An old Parliamentary hand, to use a phrase consecrated by Gladstonian usage, has told me that he has never seen such unanimity displayed on any subject before. The Government, which has a large and well-disciplined majority at its back, can easily pass the measure; and from what I hear it is determined to do so. The bill has virtually the support of every



CHRISTIAN FENGER, M.D.

was prosector and during 1873 and 1874 privat-docent at the Copenhagen City Hospital. A year later he was a member of the Sanitary Council and surgeon to the Khalifah of the district of Cairo.

Zeal for thorough scientific education led Dr. Fenger to encourage thoroughness in others as well as to make it the rule of his own life. To him is due the decision of many of the younger surgeons of the West to pursue post-graduate courses in the European universities.

Starting at the Cook County Hospital, he soon was given honor by other institutions. In 1880 he was curator of the Rush Medical College Museum; in 1884 professor of clinical surgery at the College of Physicians and Surgeons; nine years later professor of clinical surgery at Chicago Medical College. Rush Medical College honored him in 1899 with the chair of clinical surgery. Other hospitals than the Cook County claimed a share in his work. He is said to have performed between seven thousand and eight thousand postmortem examinations.

On the occasion of Dr. Fenger's sixtieth birthday, a testimonial banquet was given to him at the Audi-

section of the House, and Sir Walter Foster, who is a politician first and a physician afterward, will doubtless see the prudence of executing a strategical movement to the rear. Of course, in Parliament the unexpected often happens and the bill may even yet fall into one of the numerous traps which the rules of parliamentary procedure set for unwary legislators. But the chances are that it will become law in the course of the present session. If the profession does not like it, the Government might reply, "*Tu l'as voulu, Georges Dandin!*" The bulk of the profession, however, recognizes the need of legislation, but the controversy on the subject has been so acrimonious that men of moderate counsels did not care to take part in it. Hence, the voice of a handful of demagogues and men whose aim appears to be to transform the profession into a trades-union has been allowed to go forth as that of the medical profession.

The New Sydenham Society has just issued a volume containing among other things a reprint of "An Essay on the Treatment and Cure of Pulmonary Consumption on Principles Natural, Rational and Successful; with Suggestions for an Improved Plan of Treatment of the Disease Among the Lower Classes of Society; and a Relation of Several Cases Restored from the Last Stage of Consumption to a Good State of Health," by George Bodington. The work was originally published in 1840 and was totally forgotten till a few years ago when the open-air treatment of phthisis began to come into fashion. Bodington, defying that bogey of physicians of the early part of the nineteenth century, "phlogiston"—which he called the "raw head and bloody bones" of medical science—fed his consumptive patients generously, and initiated what was practically a system of sanatorium treatment in which great attention was paid to the dryness, mildness and purity of the air in which the patients lived, to "systematic arrangements with regard to exercise, diet and treatment, with the watchfulness daily—nay, almost hourly—over the patient by a medical superintendent." Bodington spoke out, with no uncertain sound, in condemnation of the practice prevalent in his day of shutting consumptive patients up in a close room, from which the atmospheric air was as far as possible excluded, "thus forcing them to breathe over and over again the same foul air contaminated with the diseased effluvia of their own persons." In speaking of treatment by the inhalation of gases of various kinds, he says that "the only gas fit for the lungs is the pure atmosphere freely administered without fear," adding that "its privation is the most constant and frequent cause of the progress of the disease." He goes on: "To live in and breathe freely the open air, without being deterred by the wind or weather, is one important and essential remedy in arresting its progress—one about which there appears to have generally prevailed a groundless alarm lest the consumptive patient should take cold."

One of the cases related in illustration of the beneficial effects of the open air treatment is that of a young girl of sixteen who in 1835 was believed to be doomed to an early grave. She was treated by Bodington on the principles just set forth, and in 1839 was in perfect health. Only a week ago (February 22d) the *British Medical Journal* published a letter from the patient herself stating that, now in her eighty-first year, she is still in fairly good health and able thankfully to enjoy the many mercies which surround her in her daily life. Throughout the sixty-six years which have elapsed since she was practically under sentence of death she has, on the whole had remarkably good health.

Bodington spent the greater part of his professional life in charge of a lunatic asylum at Sutton Coldfield in Warwickshire. In the matter of the treatment of

consumption he was far before his time; his book was practically killed by the reviewers and thus one of the most important advances in the treatment of disease made since the days of Hippocrates was delayed for half a century. Truly in medicine the light often shineth in darkness and the darkness understandeth it not!

TRANSACTIONS OF FOREIGN SOCIETIES.

German.

SERPIGINOUS ULCER OF THE CORNEA—VACCINATION GRANULOMA—FUNCTIONAL MUSCULAR INSUFFICIENCY OF THE HEART VALVES—PARALYSIS OF THE QUADRICEPS FEMORIS—ASBESTOS UTENSILS FOR THE SICK—COLIC, BLEEDING AND INFLAMMATION OF THE KIDNEYS.

THE German societies have recently listened to important contributions on a large variety of topics of which the following are the best:

VELHAGEN, at the Medical Society in Chemnitz, December 11, 1901, read a paper on the early diagnosis of serpiginous ulcer of the cornea and stated that he has for some time examined for pneumococci by means of cover-glass preparations, all the cases which came to him suffering with infiltration and ulcer of the cornea. In all cases of destructive serpiginous ulcer he found these germs usually in pure culture. On one occasion an infiltration was caused by a splinter of wood. Pneumococci were present and he cauterized the lesion with successful results. On three other occasions no pneumococci were found, although there was a rather large ulcer, iritis, hypopyon, and, in one patient, even dacryocystoblennorrhea. These patients recovered with better vision than those treated by the cautery.

NAETHER read a paper on the subject of granuloma following vaccination. This had occurred in about seven per cent. of his five hundred cases of revaccination, usually about the twentieth day after the vaccination and at the site of the scar where neither nodules nor pustules nor signs of inflammation were present. On the other hand there were granulation tumors of the size of ordinary beans which were diagnosed with the microscope as well as clinically. The cause of these seems to be one class of bacilli belonging to the pseudodiphtheritic group which Nauwerk has cultivated both from lymph and from granulation together with staphylococci. This latter authority states that in ordinary pus these germs are not as harmless as many authors indicate.

F. KRAUSE, at the Berlin Medical Society, January 15, 1902, reported a case operated on four years ago for paralysis of the quadriceps femoris. A cure was obtained by a transplantation of the flexor muscles of the thigh. When two years old the patient had a spinal paralysis which left the quadriceps femoris very much impaired and withered with a later contracture at the knee. Now, however, after the operation the patient possesses a certain gait, although, on account of the shortening of the limb, with limping. Electrical reaction showed the quadriceps muscle entirely paralyzed, while by stimulation of the flexor muscles the leg was promptly extended upon the thigh. At the operation the flexor muscles were liberated on the outer and inner aspects of the thigh and their tendons were sewed on either side of the patella.

KORNFIELD, at the Society for Internal Medicine at Berlin, on January 13, 1902, showed numerous utensils for the sick. These consisted of about 95 per cent. of asbestos, which the author states would on the long run be much less costly than the renewal of furniture and utensils made of wood. Both characteristics, cheapness and indestructibility by fire, induce one to try them.

They can also be sterilized easily by making them red hot. The articles which he suggests are spit cups, mouth spatule and similar instruments. He hoped to succeed in the future in making chairs, closets and the like of the material.

SENATOR read a paper on colic, bleeding and inflammation of the kidneys, in which he made the following points. James Israel has recently published accounts of the results of his operation of splitting the kidney for colic, bleeding and even inflammation of the organ. Certain specialists in genito-urinary diseases have also been following his example. Senator made his paper a contention against these observations. Israel has had such good results after these interventions that in certain cases he assumes there is a strong hyperemia of the kidney which goes on to the stretching of the capsule of the organ and then to great pain. All of these conditions, he claims, are relieved by the operation of splitting the kidney. In a similar manner, by relieving the tension, bleeding may be overcome and occasionally a good influence exerted upon inflammation itself. Senator cured a case of renal hemophilia as early as 1890 by removal of the diseased organ, but he now believes that the cases which Israel cites did not, for the most part, present this condition of stretching of the capsule. He makes these observations after having seen a number of such cases himself and after noting that in Israel's own report of fourteen cases the kidney was noted as being soft and flabby or in a similar condition. Senator therefore thinks that this explanation of renal colic is not satisfactory and that this form of surgical operation is hardly justifiable. Furthermore, if the object of this operation be to cure congestion or bleeding, the bleeding itself would be the best method of relieving the congestion. Naunyn, indeed, reported three cases of rapid bleeding in inflammation of the kidney which recovered without any operation whatever. Pel and Rosenstein have lately declared themselves against the operation, while surgeons and genito-urinary specialists have taken it up with eagerness. Finally, as to nephritis, only small sections were removed and examined microscopically. It is probably true that in no case was there well-developed Bright's disease, but rather localized affections of the kidney. Israel himself, however, did not go to such extremes as his imitators who have proceeded without any consideration.

LENHARTZ, at the Physicians' Society in Hamburg, January 7, 1902, delivered an oration celebrating the twenty-fifth anniversary of E. Fraenkel which occurred on January 1, 1902. That date marked twenty-five years of unbroken service as prosecutor in the various institutions in Hamburg. The speaker paid a tribute to his accomplishments, intelligence, wisdom, scientifically critical attitude and powers as a teacher. He closed by stating that the greatest number of physicians practising in Hamburg valued their relations with Fraenkel and considered themselves fortunate therein. His chief service to them has been that of furnishing the means of knowing much in pathology.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

Stated Meeting, Held February 18, 1902.

E. Franklin Smith, M.D., Chairman.

Etiology of Endo- and Pericarditis.—Dr. Frederick A. Packard of Philadelphia read a paper involving the consideration of some points in the etiology and diagnosis of endocarditis and pericarditis. He dwelt particularly on the fact that microbes play an

important rôle in the etiology of endocarditis and that even when they have disappeared completely from the valve lesions at autopsy, this is no sign that at some time they were not present to begin the series of pathological changes. There is, however, a chronic endocarditis that develops without inflammation and that is due to high tension in the arterial system. This can no more be considered truly inflammatory than can the changes in a cyanotic liver be considered to be due to a true hepatitis.

Pericarditis is a more purely local disorder than is endocarditis, because of the fact that it has no direct connection with the blood-stream. One of the functions of the pericardium, recently insisted on, is its power to prevent overdistention of the heart. In this it acts like the cover of a football or the second bulb in a Paquelin cautery. Dr. Packard dwelt particularly on certain symptoms that should arouse suspicion of the pericarditis. One of these is delirium, without the hyperpyrexia of rheumatism or renal involvement; when a delirious patient is admitted to the hospital it is always well to examine the precardium. Another suspicious sign that has recently been pointed out is an inequality of the pupils. Dr. Packard brought out the fact that the usual diagnostic symptom of triangular dulness with the base downward is not often present in pericarditis. The most pathognomonic symptom seems to be dulness in the fifth interspace to the right of the sternum. Dr. Packard's paper will appear in full in a subsequent issue of the *MEDICAL NEWS*.

Dr. William H. Porter said that there were many non-inflammatory conditions of the pericardium that must be borne in mind. The milk-white patches often found postmortem are significant of fibrotic changes of a not very serious character. Punctate hemorrhages into the pericardium are not unusual and occur in such diseases as scurvy and leucocythemia and in certain of the infectious fevers. New growths are rare and yet occur with sufficient frequency to make them of interest even to the general practitioner. Gummatus formations are more frequent than others. Tuberculous lesions of the pericardium are really inflammatory, but because of their slow course they resemble the non-inflammatory conditions. Miliary tuberculosis is the most frequent form and may be accompanied by hemorrhagic exudation. The true inflammatory processes in the pericardium are mainly serous and fibrous; there is also the severer form of purulent pericarditis. The endocardium is less vascular than the pericardium and has therefore less tendency to redness or to hemorrhagic conditions than the pericardium. It is manifest that in inflammatory conditions causing exudation of serum this material is carried away by the blood-stream. Congestive conditions of the layer beneath the superficial covering of the endocardium is the first change in inflammatory conditions, and this causes an overgrowth of the superficial layer of cells. There are various grades of proliferation and after the proliferative process degenerative changes may set in, causing a deposit of fat or setting up ulceration or calcification. When small pus foci occur the process is known as malignant endocarditis.

Simple endocarditis is not, as a rule, bacterial in origin, but rather toxic. The toxins are manufactured by micro-organisms situated somewhere in the body, but usually not localized on the tissues of the valves themselves. As a rule, micro-organisms are not found in the vegetation on the heart valve at autopsy. It is not improbable that the changes thus seen are rather the result of a previous inflammatory condition than of an actually progressive inflammatory process.

Treatment of Endocarditis.—The first consideration with regard to endocarditis must necessarily be

the possibility of its prevention. Unfortunately, however, not much practical good can be done in this way. It is impossible to stop the rheumatic process to which the endocarditis is usually due, and the other great causes of endocarditis, Bright's disease and syphilis, are equally obstinate to curative treatment. One can, by supporting the system, enable it to throw off the symptoms. The most important idea for this is absolute rest for a prolonged period.

Treatment of Pericarditis.—For the discomfort that is so often characteristic of pericarditis an ice-bag or a flyblistor to the precordium may prove useful. The blister acts reflexly and probably also relieves pressure upon sensitive nerve-endings in the pericardium. With regard to tapping the pericardium there is no established rule; if the heart's action become embarrassed, it must be relieved by aspiration. Unlike tapping for pleurisy this operation in pericarditis is never without its dangers. If, however, a pericardial effusion resist all absorptive treatment, tapping of the pericardial sac, in order to relieve the heart of the inconvenience and interference with its action due to the presence of the fluid, is not only justified but indicated. An article by Dr. Porter on this subject will appear in a subsequent issue of the *MEDICAL NEWS*.

Dr. Stephen Burt, in discussing the papers on endocarditis and pericarditis, said that valvular lesions do not represent an active process, but are the remains of an inflammatory condition. Usually they are not progressive, hence it may well happen that people with a limited valvular lesion may live on for many years. Dr. Burt has recently seen a patient who has lived for more than forty years with a distinct aortic lesion. The prognosis of these cases is not nearly so fatal as has been thought and the life insurance companies are gradually coming to the realization that many of these cases may well be insured under certain conditions. With regard to the diagnosis of pericarditis, Dr. Burt considers that the superficial character of the murmur in pericarditis is the most distinctive sign. Pericarditis is undoubtedly often missed. With regard to the treatment of endocarditis Dr. Burt considers that digitalis, in spite of supposed physiological objections that have been urged for certain conditions, must always be the sheet anchor.

Diagnosis of Endocarditis.—Dr. Connor considers that it is unfortunate that students somehow get the idea that a valvular lesion can be diagnosed by means of the murmur alone. The murmur is only one, and not always the most important, physical sign of the existence of a heart lesion. The character and position of the apex beat and the size of the heart are at least as important as the murmur. With regard to the diagnosis of pericarditis, Dr. Connor says that no single pathognomonic sign can be depended on. Not infrequently dilatation of the heart is associated with pericarditis and dulness may be found at the right border of the sternum and at the fifth interspace without necessarily indicating an affection of the pericardium. Some of the signs that arouse suspicion of the presence of pericarditis are important. Dr. Connor has now under observation a case in which inequality of the pupils exists.

Malignant Endocarditis Without Germs.—Dr. Lambert said that it seems not impossible for a typical case of malignant endocarditis to terminate fatally within a few days without any micro-organisms in the lesions being disclosed at autopsy. He has recently seen a case of rheumatism complicated by endocarditis, with the typical temperature curve of malignant endocarditis, which proved fatal. Five cultures taken from the valve, some of them with anaerobic precautions, failed to develop and the result as regards the presence

of microbes was absolutely negative. He has also seen a case of septic temperature followed by sudden death in which infarcts in the pericardium and vegetation on the valves were found, and yet it was impossible to obtain cultures from the lesions.

Dr. Lambert considers that a very important diagnostic auxiliary in cases of suspected pericarditis is percussion with the patient bending well forward. The pericardial sac is so constructed that small amounts of fluid gravitate back from the chest-wall and so cannot be detected by percussion. If the patient bends forward, however, the fluid can be recognized rather easily and the area of dulness on both sides of the heart will be found to be increased. This is a bit of diagnostic technic that Dr. Chvostek of Vienna insisted on and frequently used with excellent results.

Valvular Degeneration.—Dr. Quimby said that there are two facts that must be borne in mind with regard to the development of valvular endocarditis. The mitral valve curtain is not a valve in the ordinary sense of the word like the aortic valve, but is a partition drawn up against the column of blood and holding it up. This physiological fact explains the mechanism of the Flint murmur which is so often a matter of dispute. It must be remembered that valvular defects developing after middle life are not always inflammatory, but may be degenerative. They are the result of pure traumatism, of irritative properties of the blood and disturbance of the muscular power of the heart. Men who work at high tension develop a progressive murmur, the result of the overuse of the tissues. The prophylaxis of these lesions is the relief of high arterial tension by a let-up in the method of life that provides for more relaxation.

Hydrophobia and Pericarditis.—Dr. James J. Walsh said that the diagnosis of pericarditis is not difficult if it is suspected. The condition is often overlooked because attention is not called to the precordial region and careful search for the physical signs of pericarditis is not made. Extraneous signs, then, that arouse suspicion of the existence of pericarditis are important. Dr. Packer has called attention to the delirium that often accompanies pericarditis and to the inequality of the pupils that may occur. French writers have called attention to the fact that the involvement of the recurrent laryngeal nerve, because of pressure within the pericardium, may lead to the development of a set of symptoms resembling hydrophobia. There is a deglutition spasm brought on by even the thought of food which resembles that seen in true rabies and which is due to the same nervous reflex. Many of the cases of hydrophobia said to occur years after a dog-bite are really due to the existence of an overlooked pericarditis. Dr. Walsh remarked that another bit of technic in use at the Vienna hospital, the examination of patients in the knee-elbow position, is often useful in ascertaining the presence of small quantities of fluid in the pericardium which have escaped other methods of detection.

Mortality From Pneumonia.—Dr. Stephen D. Burt said that the average length of life in this country has increased very notably. In 1890 it was about 31.4 years. According to the census of 1900 it is now over 35 years. There has been a decline of ten per cent. in the mortality of the large cities. Notwithstanding this there is an increase in the mortality from pneumonia. The three most prominent causes of death in the mortality statistics are pneumonia, consumption and heart disease. Consumption during the last decade has increased very considerably in fatality. Heart disease is still as important as ever in the statistics, but it is probable that better diagnostic methods have revealed more cases than before and that there is really

a lessened mortality. Pneumonia, however, is undoubtedly taking off many more people than formerly; in the winter and early spring its mortality is almost in direct ratio to the density of the population. It attacks especially the weaklings and the old and seems to be particularly fatal in the negro race.

Infection of Pneumonia.—Pneumonia is infectious through the sputum of patients suffering from the disease. Owing to the fact that pneumonia patients are confined to their rooms, this is not so widely scattered as in the case of tuberculosis, but there is undoubtedly more danger of contagion than has been thought. It is well known that epidemics of the disease occur in barracks, hospitals, asylums and schools. This feature of the disease was recognized even before the discovery of the microbic cause of pneumonia. The disease would undoubtedly spread much more widely than it does, except that a special predisposition seems to be necessary for its acquirement. Overcrowded cars and ferries and overheated dwelling-places without proper ventilation not only furnish the favorite conditions for the pneumococcus, but also foster conditions of the mucous membrane that lower resistive vitality. The pneumococcus exists in the mouth of even healthy individuals and it is probable that the changes which lower resistive vitality make it virulent.

Prophylaxis of Pneumonia.—The best prophylaxis of the disease consists in avoiding exposure to inclement weather, especially at times when the system is not over strong, and in avoiding crowded places of all kinds. Ill-ventilated meeting-places, be they churches, theaters, public halls, or schools, are the breeding-places of pneumonia. Discrimination must also be exercised with regard to food, to water and especially to air; the mouth should occasionally be washed out with some mild antiseptic solution, which, however, should possess sufficient strength to be effective. Rinsing the mouth with formaldehyde, twenty drops to the pint of water, is undoubtedly an excellent precaution. The sputum of patients suffering from pneumonia should be disinfected.

City Sanitation.—Little as it is realized, there is the strongest kind of solidarity as regards health between the rich and poor in large cities. The existence of the sanitary tenement-house saves the mansion from many an otherwise annoying or perhaps fatal illness. There were 10,500 deaths from pneumonia in New York during the year 1901, and yet few cities are so healthfully situated. Its island location, with abundance of sunshine during the year and proximity to the ocean, makes it eminently salubrious if but proper care be taken of sanitary conditions. More careful ventilation of theaters, shops, churches, schools is needed. The streets should be washed and swept as they are in Paris and arrangements should be made by which offending material, such as the excrement of animals and human sputum, should not be allowed to be cast into the streets. No doubt, improvement has come along these lines of late, but there is still much to be done. The reward of hygienic regulation is easy to foresee.

Prevalence of Pneumonia.—Dr. W. Gilman Thompson said that pneumonia is undoubtedly more prevalent than it used to be and its frequency in the statistics is not due merely to better diagnosis. Watson, in his Text-Book of Medicine issued thirty years ago, said that he saw perhaps five to six cases of idiopathic pneumonia in a year; for a man in extensive hospital practice this was, of course, an extremely small number. There is no doubt that epidemics of pneumonia may occur. Dr. Thompson has seen such an epidemic in a ward of the Presbyterian Hospital, among patients who had been for a considerable time

in the institution, as the result of the admission of a pneumonia patient. It is always insisted that lowered vitality is necessary for the contraction of pneumonia, but it will be found to occur almost as frequently among people of robust health.

Treatment of Pneumonia.—Dr. Beverley Robinson said that pneumonia is undoubtedly contagious and seems to have a tendency to affect especially relatives of the patient who are run-down by the worry and loss of sleep consequent upon nursing. Care should be taken, therefore, to disinfect the patient's sputum and the hands that come in contact with this secretion. Undoubtedly the treatment of pneumonia by an antiseptic, one of the creosote preparations, for instance, helps to prevent the spread of the disease. Probably no remedy will abort the disease, but the creosote preparations add considerably to the comfort of the patient. Dr. Robinson thinks that Dr. L. Nammack's excellent résumé of the four things necessary in the treatment of pneumonia cases should be in every practitioner's mind, namely, strychnine, nitroglycerin, oxygen and alcohol. Dr. Robinson suggests, as Opie said to the man who asked him what he mixed his paints with, that these four remedies be mixed with brains.

Relative Increase of Pneumonia.—Dr. Andrew H. Smith said that while pneumonia is actually on the increase, this is really relative to certain factors. Pneumonia is especially fatal in old persons and at the present time, as the result of better hygienic surroundings, persons live to an older age than before. Besides, in the longer average duration of life, individuals have more opportunity to pick up the pathological conditions of heart and kidneys, for instance, that make the prognosis of pneumonia so much more serious than formerly.

Varied Virulence.—The pneumococcus is very varied in its virulence; in the laboratory it is very well known that while some specimens are very fatal to animals, others produce scarcely any fatal effect. Epidemics of pneumonia are prone to occur, especially when the disease develops in very virulent form. It is probable that the ordinary mucous membranes of the body are not favorable to the development of the pneumococcus. It does not seem to grow well on ciliated epithelia, while serous membranes and especially mucous membranes without cilia, are favorable locations for its multiplication. Anyone who has tried to obtain specimens of the microbe knows how fastidious it is with regard to growing on artificial culture-media. It is extremely difficult to grow for successive generations in the laboratory. When the pneumococcus reaches the air-cells in the lungs, however, it grows very rapidly and pneumonia results. When the inflammatory process reaches the boundaries of a lobe it is mechanically arrested, hence the occurrence of lobar pneumonia.

Treatment of Pneumonia.—The pneumococcus is not very resistant to antiseptic influences and so there is the temptation to use antiseptics in the treatment of pneumonia. Some of the creosote preparations, especially creosote carbonate, under the form creosotal, have proven especially useful; it is easier to take than any of the other forms of creosote. When this drug is used ninety per cent. of the cases of pneumonia go on to resolution by lysis instead of by crisis. Other remedies must not be neglected and nitroglycerin is especially valuable, being, in this disease of greater worth than digitalis. When the patient becomes blue it is a signal for the free use of nitroglycerin, rather than digitalis.

Constitutional and Local Infection.—Dr. Frederick A. Packard said that it is perhaps a mistake in present-day medicine to regard such diseases as typhoid

fever and pneumonia as constitutional with local manifestations. Typhoid fever is a primary infection of the intestine and only secondarily infects the general system. Pneumonia consists of an infection of the lungs and the resulting toxemia is only secondary. From this standpoint the therapeutics of these diseases is more encouraging and a truer idea of the condition is obtained.

Pneumonia at Groton.—Dr. Alexander Lambert said that the series of cases of pneumonia that occurred at Groton was not, in his opinion, an epidemic of pneumonia, but the coincidence of frank cases of the disease in school-boys who were exposed to the rather changeable weather of the last few weeks. Dr. Lambert called attention to the fact that pneumonia always remains local except in fatal cases. The pneumococcus can be discovered in the blood only within from twenty-four to forty-eight hours before death. Cases with a good prognosis invariably show no pneumococci in the blood.

Dr. Morris Manges said that if sufficient blood be taken for examination the pneumococcus will be found very frequently in the blood of pneumonia patients. Previous bacteriological examinations in this regard have been at fault because of errors of technic. Pneumonia seems still to fall best into the category of constitutional diseases with a local manifestation.

BOOK REVIEWS.

TRANSACTIONS OF THE AMERICAN OPHTHALMOLOGICAL SOCIETY. Thirty-Seventh Annual Meeting, New London, Conn., 1901. Hartford. Published by the Society. 1901.

In contrast with the Transactions of the sister society, the American Otological, for the same year, these are of much greater value, not merely in the quality of the ordinary material, but also in the fact that they embrace two most desirable new features. These are, first, a report covering 40 pages "On the Supplementary Histories of Cases Recorded in the Transactions of the Society Prior to 1900;" second, a report covering 45 pages, "On Standards and Methods of Examining the Acuteness of Vision, Color-Sense and Hearing." This last report is most careful and exhaustive and is of great value and authority.

Two of the papers presented were unusually valuable in their sweep and interest. These were presented by Drs. de Schweinitz and Bull, the first on glaucoma, the second on metastatic choroiditis. The whole volume is up to the highest type of its class.

A GUIDE TO THE MICROSCOPIC EXAMINATION OF THE EYE. By PROFESSOR R. GREEF, Surgeon, Ophthalmic Department, Royal Charity Hospital, Berlin. Translated from the Second German Edition by HUGH WALKER, M.A., M.B., C.M. Price \$1.25. P. Blakiston's Son & Co., Philadelphia.

THIS monograph of 171 pages appears to us to be well-nigh complete and perfect both in form, make-up and material. The paper has that soft tint which is much more restful to the eyes than the glaring white paper so generally used in this country. The type even has a most perfect character of its own. This volume contains all essential information for the most complete microscopical examination of every tissue of the eye. Three-fourths of the book are devoted to general considerations of the means of preparing and caring for the tissues, methods of fixing, hardening, embedding, staining; specific methods of staining; demonstration of definite substances, such as cholesterin and tissue elements. The second part of the book occupies the remaining fourth of it and studies in detail the

cornea, iris and choroid, lens, zonula ciliaris, retina and optic nerve. For compactness and elegance of form and for concise yet full and thorough treatment of the subject, the book is a model.

TRANSACTIONS OF THE AMERICAN ORTHOPEDIC ASSOCIATION. Fourteenth session, held at Washington, D.C., May 1, 2 and 3, 1900. Volume XIII.

SINCE America has been the pioneer in orthopedic work, it follows that the transactions of her association representative of this department of surgery must always be of great interest and value. The association is to be cordially congratulated on presenting a volume of its own making which in every detail is the equal of its predecessors. The paper is pure, the type large and clear; the illustrations—particularly the photographic reproductions—are admirable.

The volume is introduced by an address of the President, Dr. Harry M. Sherman. It is an able plea for the furtherance of orthopedic instruction in our medical schools. In speaking of the far-reaching need of this, after citing the unhappy fact that with the exception of genito-urinary work orthopedics comes at the bottom of this list, only a little more than one-half of the colleges giving recognized orthopedic courses, he says: "It is not as a sentimentalist that I mention the child's age and his helplessness. It is because the acts committed on him when he is young and helpless reach out and affect him when he is neither. The old can get but a few years' benefit from any surgical procedure; the middle-aged may have only the last half of life made or marred by surgery. But for the child it is different. Success or failure is for life; it will tell for good or evil in the developing of mind and character."

While every paper presents points of interest, there are some which seem particularly progressive. Dr. Joel E. Goldthwait of Boston, in summarizing his conclusions on knee-joint surgery, says: "Operations upon joints need not be feared more than operation upon other parts." The general trend of opinion among the members is strongly adverse to forcible correction of the deformity in Pott's disease—the New York men in particular feel that they have demonstrated its futility. In discussing the treatment of abscesses of the joints, Dr. A. M. Phelps, after denouncing the "let-alone" method and describing the results obtained by establishing very free drainage and disinfection by pure carbolic followed by alcohol, closes with the following words, which must seem very reasonable to the general surgeon: "I believe that we, as orthopedic surgeons, have no right to violate established scientific surgical laws." These and many other papers make the Transactions of the thirteenth congress of very unusual interest and value.

BOOKS RECEIVED.

The MEDICAL NEWS acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the MEDICAL NEWS will shortly appear.

EIGHTH ANNUAL REPORT OF THE BOARD OF MANAGERS OF THE CRAIG COLONY FOR EPILEPTICS. 1901.

STUDIES IN THE PSYCHOLOGY OF SEX. By Havelock Ellis. 8vo, 272 pages. F. A. Davis Company, Philadelphia.

AMERICAN EDITION OF NOTENAGEL'S ENCYCLOPEDIA. Variola, Varicella, Cholera, Erysipelas, Whooping-Cough, Hay-Fever. By Drs. Immermann, Jurgensen, Liebermeister, Lenhartz and Sticker. Edited by Dr. John W. Moore. 8vo, 682 pages. Illustrated. W. B. Saunders & Co., Philadelphia and London.